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A NATIONAL PUBLICITY BUREAU.

EVERYWHERE we turn we are met with the proposition to **educate, educate.** The consumer is being educated to use certain brands of goods, to demand certain kinds of eatables, of wearing apparel, of automobiles. And co-operative efforts among those interested are getting definite results.

This same idea of education is being carried out in a large way by various industries to the good of their members. A noticeable example of this activity is shown in the publicity bureaus of the several political parties. Other associations have taken up such methods. The advertising of the slate manufacturers, advocating the use of this material by the plumbers, that of the cypress and other lumber people, extolling the merits of their product, the educative work of the brick people, and the vigorous efforts of the cement people, with their annual cement shows, are all bearing fruit.

These are associations formed for the good of the members. The same spirit brought about the formation of the National Association of Master Plumbers and the National Association of Master Steam and Hot Water Fitters, and has maintained them in their present high standing to this day.

A national publicity bureau to promulgate modern sanitary methods among the people—to extend the business of the plumber and fitter—why not?

This bureau could supply to the newspapers and magazines interesting articles, advocating modern plumbing and heating, could furnish the members of the trade with literature, charts, selling ideas and accounting systems, could work in connection with local and state boards of health to improve sanitary conditions.

All of this work would directly benefit the trade. It would cost something, of course, but much of the cost would be so divided as to represent an investment, not an expense.

In this issue appears an article entitled, "Spreading the Gospel of Practical Sanitation," in which is embodied some practical hints and suggestions along this line. It is well worth reading.

Such an organized plan would get big results, don't you **think?**

Plumbing in Public School Building No. 46, New York City

In No Other Class of Public Work is Greater Progress Being Made Than in the Plumbing of Public School Buildings. This Up-to-Date School is an Example

NEW YORK CITY is engaged in an educational race between the increase of its school population on one hand and its schooling facilities on the other. The increase in population is so rapid and so non-predictable together with the fact that whole sections are built over almost in a night, which makes it impossible to provide accommodations for all where they are needed. Conditions which are exactly right to-day would not be at all suitable three years from now and for that reason New York is always on the build as far as school houses are concerned. With so much practice it would seem that the erection of the school buildings should have been gotten down to almost a science and it will no doubt be interesting to the average plumber to know just how the piping and toilet facilities are taken care of.

We have taken for example School No. 46, which is located on the North side of 196th street between Briggs and Brainbridge avenue, in the Borough of the Bronx, which is one of the recently completed buildings and is a very good type of standard construction along this line. The building was designed by the superintendent of school buildings, C. B. J. Snyder, together with Samuel R. Brick, Jr., who is deputy superintendent for the Bronx. The building itself was erected by T. A. Clark Co., of Brooklyn, general contractors, the plumbing work being performed by Ruegamer & Auer, also of Brooklyn, N. Y.

The following is a brief description of the sanitary features and should be carefully noted.

Drainage System.

The drainage system for this school house is run in extra heavy cast iron pipe from the connections with the street sewers back into the building, with running traps having two handholes and heavy cast brass screw plugs, back of which are connected fresh air inlets extending from the house side of the trap to the outer air and terminating in a special fresh air inlet valve. The house and yard drains are run from their respective house traps with extra heavy cast iron pipe when covered with earth, or with galvanized wrought iron pipe if exposed. These drains are pitched with a uniform grade with the traps placed so as to be readily accessible, and trap pits constructed at point where required. Cast brass cleaning screw plugs of the same size as the pipe are connected to all the underground drain lines by means of heavy cast iron ferrules; these screw plugs finish flush with the floor or pavement and are placed at the ends of all lines and at all points where changes in direction occur.

The soil, waste and vent pipes are connected to the house drains or their branches and are in general of galvanized wrought iron pipe. All the traps are located as near the fixtures as practicable and still remain readily accessible; they are fitted with approved cleaning screws of sizes corresponding to the sizes of the trap and are so arranged that in no case does the waste of any fixture pass through more than one trap before entering the house drain. The vents are dripped full size into the main drains, soil or waste pipes and no vent is taken from the handhole of any trap. All soil, waste and vent pipes are extended up to the roof and are arranged to prevent leakage by the use of flashing of 20 oz. copper 20 inches square with a copper tube of like weight 15 inches long, soldered to same. This is slipped over the pipe and a recessed coupling screwed down over the tube. The flashing is then secured to the roof in a water tight manner and the soil, waste or vent pipe is extended on up from the coupling to the required height. At the foot of all vertical soil, waste or vent lines there is installed a tee fitting of corresponding size and material fitted with brass screw plug. Fittings with brass screw plugs are inserted in the vertical soil, waste and vent lines at the several stories to provide for future fixtures. Fig. 1 is a half cross section of the building showing an elevation of some of the stacks, the methods of connecting the various fixtures, and the manner in which the stacks are connected together at the bottom by the house drain.

The yards, areas and floor drains have cast iron catch basins, "Board of Education" pattern, fitted with galvanized malleable iron gratings. They are vented and trapped with cast iron running traps having handholes and cleanouts as previously described. The wrought iron pipe used on the drainage system is of galvanized wrought iron dipped in molten metal and not electroplated. The fittings on all the wrought iron pipe of 1½ in. in diameter or larger (with the exception of the vent pipes) are extra heavy cast iron galvanized, recessed, drainage pattern fittings. Those less than 1½ in. are beaded galvanized, malleable iron, while on the vent pipes ordinary cast or malleable iron, steam and water fittings are used.

The waste pipes to the urinals are of 3 in. size and are of brass with heavy brass recessed drainage fittings, with 2 in. brass branch pipes for each fixture. These are vented by 2 in. galvanized wrought iron vent branches connected into a 3 in. galvanized wrought iron pipe vent header, which is carried to the main vent. The water closets are connected to the soil stacks by 4 in. galvanized wrought iron pipe with galvanized recessed fittings and have a 2 in. galvanized wrought iron vent taken out from a recessed vent connection fitting placed just below and close to the closet floor. The waste connections for sinks are in general 1½ in. or 2 in. in size and are of lead or galvanized iron.

Water Supply.

The water supply for the building is procured from two 2 in. connections with the street water mains from which is extended "AAA" lead pipe to inside of the building wall. On each supply main is placed a short nipple and approved gate valve with a 1 ft. length of galvanized wrought iron pipe, then a heavy brass union, another 1 ft. length of galvanized wrought iron pipe, then a gate valve, check valve and a ⅝ in. compression hose bibb, with an air chamber about 12 in. long. From the check valve the supply main is extended with "AAA" lead and galvanized wrought iron pipe to the pumps, reservoirs, fixtures and steam boilers. On the supply main at the curb is placed a stop cock and an iron box as required by the Water Department of the City of New York, Borough of the Bronx. A 2 in. by-pass (which is provided with a gate valve) is made at the cross connection between the two water supply mains at the cellar ceiling.

The water pipes which extend underground are placed in extra heavy cast iron pipe sleeves wherever consid-

ered necessary and the joints of these cast iron sleeves are made with oakum and molten lead; the end joints being made watertight with litharge and glycerine. The main water supply pipes after entering the building run exposed and are made up of galvanized iron pipe with Y's and eighth bends (tees being not permitted) and all galvanized wrought iron pipe is supported on galvanized iron hangers. The main water supply in the basement, which extends to the pupils' closets and urinals, has a brass gate valve with a ⅝ in. hose bibb for the purpose of shutting off and emptying these fixtures independently. The sizes of the supplies which are run to the various fixtures are as follows: Basins, ½ in.; drinking fountains, ¼ in.; sinks, ¾ in.; water closet cisterns, ¼ in.; urinals, 1 in.

On all vertical water supply pipes in each story and located about 4 ft. above each floor line, together with all branch supply pipes close to the vertical line from which they are taken, are installed brass unions with ground joints. On all vertical water lines at every story above the first, brass gate valves are placed which are operated by a detachable key; these valves are located near the floor and so arranged that the fixtures may be supplied either from the house tank or by street pressure.

The valves for the water and gas supply pipes are of gate and angle type, those of 2 in. in diameter or less being finished brass gates and those larger than 2 in. being iron body gates with bronze seat ring, composition mountings, bolted bonnets and screw ends. All fixtures have separate brass gate valves and where self-closing cocks are used, air chambers are provided.

The house tank which normally furnishes the water supply consists of a 6 ft. by 6 ft. by 4 ft. tank of ¼ in. rolled sheet steel plates connected by rivets with ½ in. of metal between the rivet holes and the edges of the plates. Where holes are cut in the tank for pipe connections heavy pipe flanges are used. Connected to this tank and extending along the fourth floor ceiling is run a 2 in. gal-

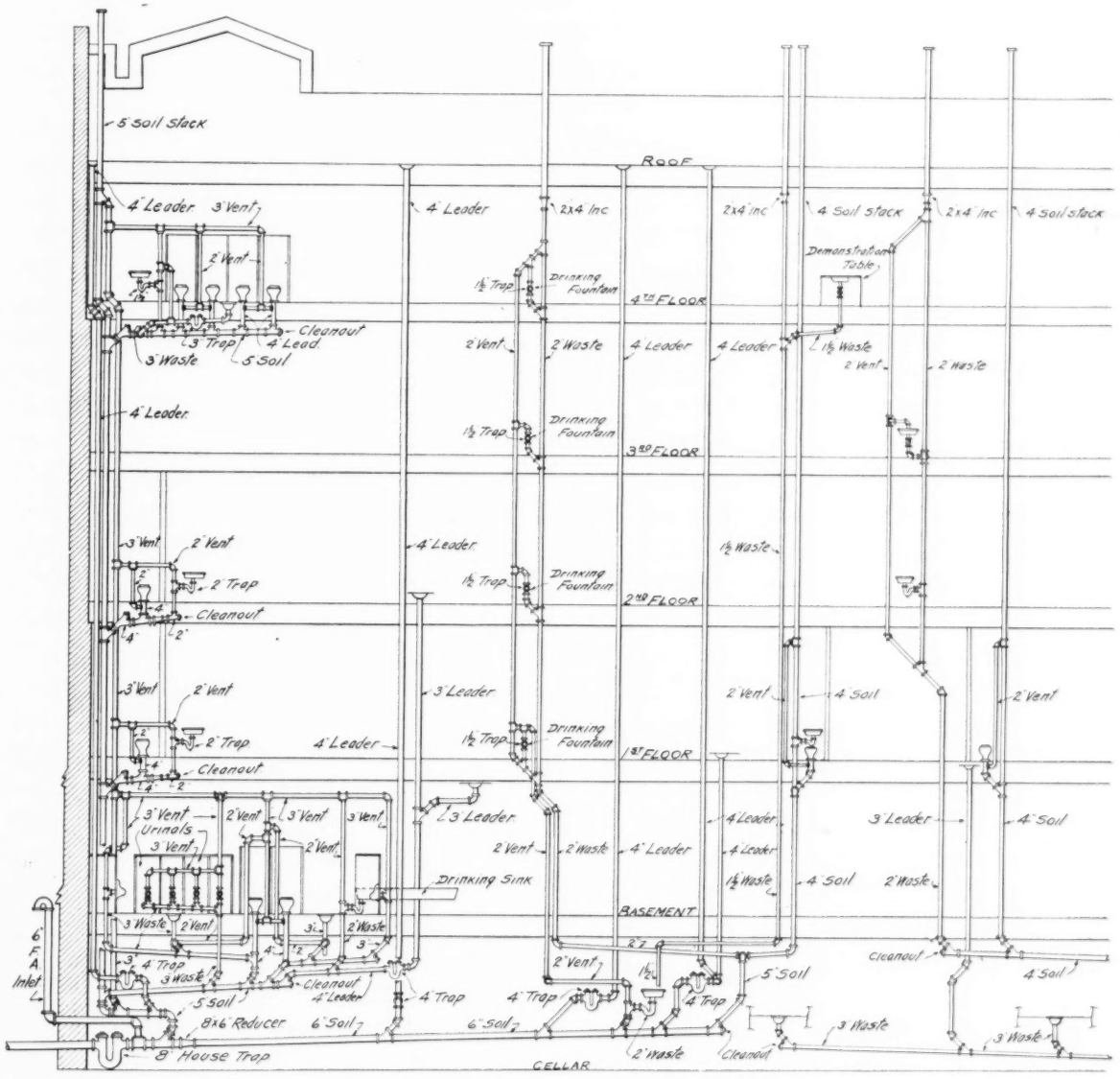


Fig. 1.

vanized wrought iron pipe with a brass gate and check valve at the tank, from which are run 1½ in. drops at all soil lines and 1 in. drops at all waste lines to supply the fixtures above the first floor. On the down supply from the tank a galvanized wrought iron air pipe is connected, which is extended up to and over the tank with a safety and vacuum valve. This air pipe is taken from the house side of the check and gate valves at the tank. A standing overflow somewhat on the style of Plate 9170-A (Motts Catalogue) is connected to the tank and

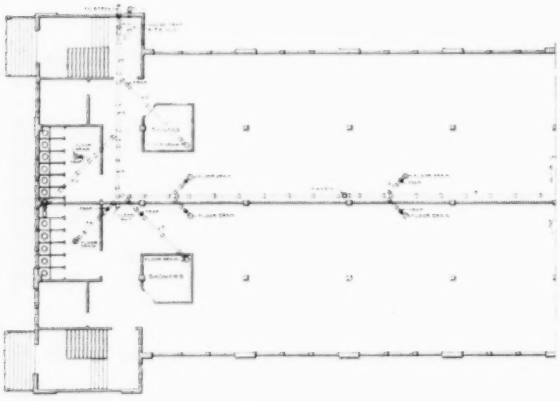


Fig. 1 A.

the emptying pipe discharges on the roof, being connected at the tank by a 4 in. galvanized wrought iron pipe with a brass gate valve. A ¾ in. galvanized pipe for a telltale is run down to the sink in the cellar.

The down supply pipe from the tank to the fixtures is extended to the cellar ceiling and there connected to the water service supply pipe from the street with the necessary gate valves, check valves and unions. A ⅝ in. hose bibb is placed above the valves for purposes of draining. Besides the cross connection between the street mains there is also a connection between the street main and the riser from the pump with check and gate valve, so that the tank may be filled from street pressure when it is sufficiently strong. A by-pass is also provided with a valve and check which is so arranged that street water may be supplied to the heater in case the house tank should be empty. An altitude gage is installed in the cellar and is connected to a ¾ in. pipe which is run up to the bottom of the tank. The pumping apparatus consists of a vertical single action triplex form 3½ in. x 4 in. house pump fitted with brass plungers and direct connected by raw hide gearing to a 3 horsepower, 220 volt, 7,200 alternations, single phase, alternating current, induction motor mounted on the same base with the pump. This pump is built for 150 lbs. pressure, both the pump and the motor being erected on a suitable foundation of the best brick laid in cement mortar and coped with 3 in. fine axed blue stone. The pump and motor are bolted to a 2 in. timber frame which is in turn bolted to the top of the foundation. A 9 oz. canvas cover with leather strap and brass buckles riveted to the canvas with copper rivets and copper washers is provided. There is also a steam pumping engine which may be utilized instead of the electric power when desired. The steam and electric pumps are connected by 2 in. galvanized wrought iron pipe to a galvanized extra heavy wrought iron suction header 6 in. in diameter and 4 ft. long, with a handhole at each end for cleaning, which header is connected to the main water service pipe by a brass gate valve and brass unions. The risers from the pumps are of 2 in. galvanized pipe, each being provided with brass checks and brass unions at the pumps and tank. The suction header and pump risers can be emptied into the sink in the basement by means of ¾ in. galvanized pipe with a brass gate valve for the former and a ⅝ in. rough bibb cock for the latter.

On the end of the steam pump riser in the tank is provided a balanced float valve and the pumps are connected up so that they can be operated either together or alone to fill the tank.

Hot Water Supply.

The hot water supply is furnished by a water heater located in the boiler room, which is supplied by a 1½ in. galvanized pipe from the house tank. The return pipe from the reservoir to the heater is 2 in. This heater is connected to the boiler flue with a 6 in. smoke pipe of No. 18 sheet iron, while the reservoir consists of a 120 gallon extra heavy galvanized wrought iron cylindrical tank guaranteed to stand 150 lbs. pressure and set upon a galvanized iron boiler stand. A draught controller similar to the "Lawler" temperature regulator is connected on to the hot water heater and governs the temperature of the water in the reservoir.

From the reservoir is run suspended on the cellar ceiling a 2 in. galvanized wrought iron hot water supply main to which are connected 1 in. hot water supply risers extending up to the fixtures at all soil and waste stacks. Also from these mains, branches of the same size as the cold water connections already given are run up to the fixtures on the first floor. All risers and branches have air chambers similar to the cold water supply and at each floor on both the hot water supply and return circulation lines are installed polished brass expansion joints.

At the foot of the hot water supply risers, is located a brass gate valve above which is a rough bibb cock for emptying purposes. From the highest fixtures on each hot water riser is run a ¾ in. galvanized wrought iron return circulation pipe which is connected into a header

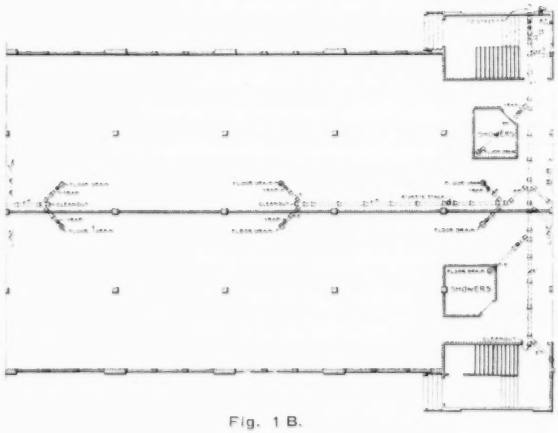


Fig. 1 B.

at the bottom and carried back to the cold water supply into the heater. On the cold water supply to the heater is placed a brass check valve same size as the pipe and a ¾ in. galvanized wrought iron sediment line is run from the reservoir to the sink in the cellar, being connected to the reservoir by a brass nipple and having a ¾ in. gate valve. Between the reservoir and gate on this sediment line is placed a ⅝ in. hose bibb. The 1½ in. down supply to the hot water heater from the roof tank has a gate and check valve at the tank and a ¾ in. pipe from

the house side of the valves on this line to the bottom of a 6 in. galvanized wrought iron pipe 5 ft. long, which is capped both top and bottom. This expansion tank is set vertically and is high above the water line in the house tank as possible. From the top of this expansion tank is extended a ¾ in. pipe so as to overflow into the house tank. Each circulation pipe has a ½ in. connection which is in turn connected into a ¾ in. drip pipe that is run to the sink in the cellar. On each of these ½ in. connections is placed a stop cock located near the circulation pipe and intended for the emptying of same, while below each of these drip branches is placed a gate valve in the circulation line.

Valves.

The valves are numbered commencing on the cellar floor with 1, on the basement floor with 100, on the first floor with 200, on the second, third and fourth, with 300, 400 and 500 respectively, and in the tank house with 600. All the valves throughout the building including both hot and cold water and gas (excepting the ones located immediately at the fixtures) have heavy brass tags 2 in. in diameter with the above mentioned numbers and the words "Hot," "Return," "Cold" or "Gas." These are attached by split key rings to the valve and the rings are soldered so that the tag cannot be removed. The numbers and letters are of block type ½ in. high stamped in the metal and filled in with black enamel, while the tags on the return pipe valves are numbered the same as the hot water valve which controls the riser or branch to which the return pipe is connected. Lists of valves are printed stating the location, fixtures controlled, and the number of the valves, and are hung, one in the boiler room, one near the pump, one in the janitor's room, one on each floor and one in the tank house. These lists are neatly framed and are covered with glass.

Fixtures.

The fixtures installed in this school are briefly described as follows:

Boiler Room Sink of galvanized cast iron slop hopper type, 30 in. x 20 in. x 12 in. deep, with galvanized cast

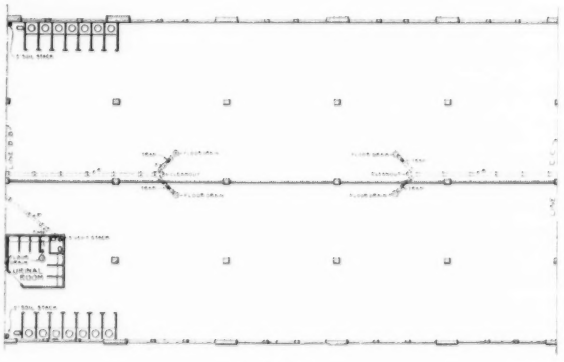


Fig. 1 C.

iron back similar to Mott's Plate No. 825-R, supported on galvanized iron standards with two ⅝ in. compression hose bibbs, 4 in. cast iron waste pipe, 4 in. cast iron trap and 2 in. galvanized wrought iron vent pipe.

Work Shop Sink of Imperial porcelain, with back 30 in. x 20 in. x 7 in., with 2 in. brass trap, 2 in. waste, 2 in. galvanized wrought iron vent, supplied with hot and cold water through two ⅝ in. faucets, the one for cold water having a hose bibb.

Janitor's Sinks of soapstone connected to waste pipe by 3 in. galvanized wrought iron pipe with 3 in. galvanized trap and 2 in. galvanized wrought iron vent, and supplied by two ⅝ in. faucets, one over each sink being self-closing and one a hose bibb.

Drinking Sinks of green slate with backs, supplied with cold water through 1 in. pipe secured to the slate backs by brass expansion bolts with ½ in. finished brass self-closing faucets spaced 12 in. apart, one over each sink having a hose nozzle. Waste of 2 in. galvanized wrought iron pipe with 2 in. trap and protected by cast brass screw

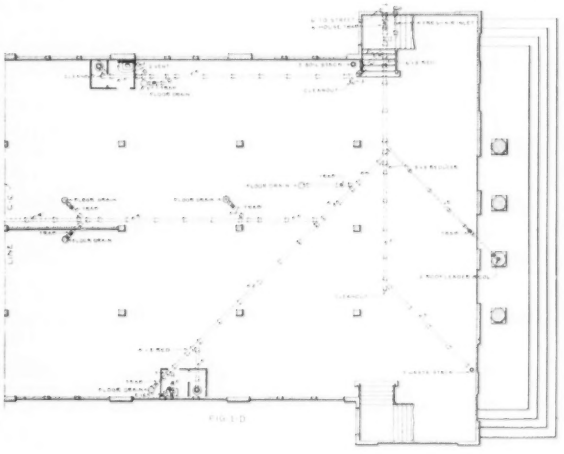


Fig. 1 D.

fitting and strainer, with a rise of 1 in. above the bottom of the sinks.

Drinking Fountains of enameled porcelain double type about 12 in. wide and 31 in. long, with integral back, nickel plated brass waste, strainers and coupling, and adjustable trap for 1½ in. iron pipe, brass plugs, strainers and 1½ in. brass traps, supported on two brass brackets; supplied with water through two nickel plated brass self-closing cocks and connected to branch soil or waste pipe and vent by 1¼ in. galvanized wrought iron pipe.

Cooking Room Sinks of porcelain pantry type with integral back and drain 61 in. x 26 in. over all, supported on porcelain legs and supplied with hot and cold water through No. 4 nickel plated ¾ in. combination faucets with china name plates, nickel plated standing waste and overflow with coupling and ash mats for sink and drain board.

Urinals are all porcelain lip type with trap and bowl, set 18 in. from the finished floor to top of lip, secured with brass screws and with 2 in. waste. Every ten urinals or less are supplied with water from soapstone syphon cisterns, and have backs, partitions, and floors of green slate, the backs and partitions being 1 in. thick and 5 ft. 6 in. high and the floor slab 2 in. thick with water tight joints.

Water Closets are extra heavy, with attractive cabinet finish, round cornered cisterns lined with 12 oz. tinned copper automatic heavy cabinet 1¼ in. seat with heavy finished brass hinges, galvanized wrought iron levers, lifting rods, and flush pipes, special "Board of Education Pattern," bolted and screwed outlet connections. The distance from finished floor to top of finished seats for Kindergarten pupils is 12 in., for the Primary pupils, 15 in., and for Grammar pupils, 17 in.

Lavatories are porcelain, 22 in. x. 24 in. in size, supported on bronze iron legs with finished brass waste

and 1¼ in. trap to wall. Faucets of finished brass, self-closing basin cock type with union nut and check valve, ½ in. supply and stop valve. Under the basins and connected to the water supply is a ½ in. finished self-closing bibb cock about 12 in. above the floor. In the teachers' rooms are set porcelain pantry sinks with integral back 24 in. x 22 in. x 7 in., with brass plug coupling, rubber stopper, brass waste strainer, and coupling, ¾ in. brass compression faucet with china name plates for hot and cold water, 2 in. brass trap, 2 in. galvanized iron waste and vent.

The Wringers and Wash Tubs in the cooking room consist of two single wash tubs, porcelain roll rim with integral back (ground), bronzed iron adjustable legs, hot and cold water supplies through ⅝ in. brass compression faucets with china name plates; brass waste plugs and stoppers, and 2 in. brass waste pipes and traps.

Gas Piping.

Gas piping is supplied to light the entire building, the gas being supplied from two meters, one of which controls the gas to the stoves and ranges in the cooking and teachers' rooms and the other the gas for the balance of the building. The piping consists of wrought iron pipe galvanized on outside only with heavy malleable iron beaded fittings, also galvanized; Y's and 45 degree ells are used in preference to tees in making branches.

Fig. 2 shows in isometric the complete gas piping for the building with the sizes of all risers and branches. The lines on each floor are controlled by separate gate valves on the same level and are dripped. Brass gate valves control each section and a special valve is provided for the auditorium; all these valves are tagged with metal tags and are tabulated in a printed directory hung near the gas meters and similar to the lists supplied for the valves on the plumbing system. All ceiling outlets are of ½ in. diameter and the outlets for brackets in the playroom and pupils' water closets are 7 ft. above the floor while in the class rooms and teachers' closets they are located 6 ft. 6 in. up. The distributing pipes are placed on top of the roof or floor beams and bent pipes are used for drops, fittings not being permitted. The gas stoves consist of nickel plated 2 hole gas stoves for teachers' rooms with a brass gate valve and brass unions on the supply. Similar stoves are installed in the cooking room with brass gate valves and brass stop cocks to the hot plates. Quick closing valves are installed on the main branches to the stoves in the cooking rooms. There are also two gas ranges similar to the "Jewel 190" supplied through ¾ in. pipe, also located in the cooking room.

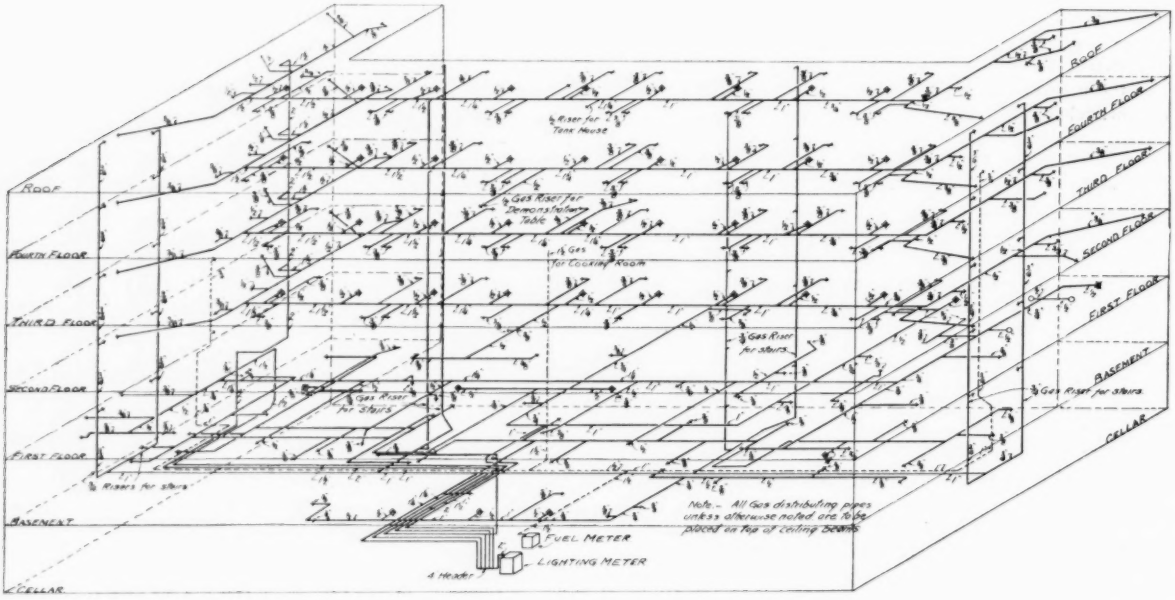


Fig. 2.

SANITARY PLUMBING IN HOTELS AND PUBLIC INSTITUTIONS.

The Nebraska division of the Travelers' Protective Association has started a movement among traveling men to agitate the enactment of a law requiring the installation of sanitary plumbing in all hotels and public buildings in the state and the inspection of same to see that it is maintained in a sanitary condition at all times. They will assist in having a bill brought before the coming session of the legislature providing for state supervision of installation of sanitary plumbing.

The traveling men are not the originators of this movement, though they are the best advocates of the need of sanitary plumbing in public places, for the National Association of Master Plumbers has been advocating such laws in almost every state in the union for the past twenty-five years and the Nebraska Master Plumbers' Association, which is a branch of the national, will present a bill at the coming session of the legislature of this state asking for a law to regulate sanitary plumbing, and providing for the inspection of all such work in public buildings and state institutions, possibly under jurisdiction of the state health department.

Hartford, Conn.—J. O. Mills & Co. have been awarded the plumbing contract for the alterations which are being made at the city hall.

Burlington, Wis.—W. F. Reineman has been awarded the $5,000 plumbing contract for the new Grant County asylum at Lancaster, Wis.

Spreading the Gospel of Practical Sanitation

HERE is an instance that is typical of many. A property-owner had an old dwelling remodeled so as to convert it into two flats, or apartments, as they were actually advertised. In order to make the flats easily rentable, he painted and papered them and installed electric lights. Then he put them on the market, and had little difficulty in renting them.

A woman with a family, which was her chief interest in life, took the upper flat, equipped with the bathroom which had been used in the dwelling originally. She looked carefully at the paper and the paint and the electric light, and gave the bath-room only a casual glance, just to make sure that it was there.

After she had signed the lease, however, she became aware that the plumbing was not in good condition. She soon learned, by the simple process of living in the same house with it, that it was actually a menace to the health of her family. She called the attention of the owner to the condition, yet had a great deal of difficulty in getting the situation relieved, and even when action was finally taken it was in the form of repairs which could be regarded only as makeshifts, and which were not and could not be permanent in their effects.

What was the cause of this condition? Was it the fault of the property-owner? Assuredly not; he was a good business man, and he knew that the people who rented houses were going to look hardest at the paper and the paint and the lighting, and were going to give the bath-room and other plumbing scant, if any, attention; and he was wise enough to spend most of his money on purely surface improvements.

Was the good woman who rented the flat for her little flock to blame? Hardly, for she had never heard much on the subject of plumbing, and knew little about it. In fact, if she had been asked to pass an opinion upon the efficiency of the fixtures in the building, she would have been unable to give an intelligent answer. They were old, but appeared to be passably good; and only use and experience could tell whether or not they were efficient.

Well, then, who, if anybody, was to blame because the improvements in the building were of the kind that "would make a show," and only of that kind?

A fair answer would be, "The plumbers of the community, who had permitted the house-owners and house-renters of the town to go uninformed as to not merely the desirability, but the necessity, of good plumbing."

That may sound like an extreme position, yet it is thoroughly tenable.

If a man eats tainted meat and becomes sick, does the public blame him for not knowing more than to eat bad meat? No, for he did not have the proper equipment of experience or information to pass on the meat. Was the dealer who sold it to him to blame? To some extent; yet not wholly so, for he was operating under the supervision of the city authorities. These were responsible, chiefly, for it was their business to inspect the meat sold by the dealer, and to examine his methods and products so closely as to make it impossible for him to sell contaminated goods to the public.

When a man goes to buy an automobile, he does not look merely at the finish of the car nor examine the upholstering; but he lifts the hood and looks over the engine, and gets at the wheel and drives the automobile, listening for every sound from the motor, so that he can determine if the most essential part of the car is up to grade. The reason why a man who is buying or renting a house does not give the same attention to the plumbing that he has given to other features of the building is because he has not been taught that the system of drainage is the most vital single feature connected with the dwelling.

It would not be fair to say that the public, as a whole, is densely ignorant on the subject; for the experience of plumbers in scores of cities, who are selling better and better goods all the time, demonstrates that there is a stronger demand for quality than there has ever been. Incidentally, the manufacturers of plumbing fixtures should be given a lot of the credit, for they have created goods which are not only useful, but beautiful, and have brought about a metamorphosis whereby the bath-room, instead of being a place to be dodged, is the show-room of the house.

Wise home-builders, instead of beginning at the parlor and going back, as one aggressive plumber put it recently, are now beginning at the kitchen and moving the other way.

But while an improvement has been made, it is a gradual one, which is all the slower because it has not been aided to as large an extent as might have been by those who are most concerned with the extension of knowledge concerning the desirability of high-grade plumbing. It has moved along almost imperceptibly, when it might have been given a big, strong push that would have sent it far ahead of its present position.

A leading plumber in an Ohio Valley city has some pretty good ideas on the subject of increasing the consumption of plumbing goods, and bettering the grade of the fixtures and connections that are installed.

"The basis of the demand for good plumbing," said he, "is knowledge of what good plumbing means. When the public learns that it means beauty, utility, and health, and that poor plumbing means uncertain, unsatisfactory and dangerous conditions, then there will be no question about the sort of service the people will require. But at present, because a room can be painted and papered for a few dollars, it is thought out of the question to fit up a modern bath-room requiring an expenditure of $250.

"It is our business to change this condition, and to bring about a thorough realization of what plumbing involves, and of the real economy of making a sufficiently large investment in this feature of home equipment. It is a proposition that affects everybody in the trade. Consequently everybody in the business, who is of the right character and possesses the right qualifications, should contribute to the expense of carrying on a campaign of education on the subject."

He continued, outlining his ideas on the subject, by stating that he believed the local association of master plumbers should get together an advertising or publicity fund, and that this should be spent in sending out literature to prospective builders, as well as in newspaper advertising.

"Every time a building permit is taken out," he said, "the owner and the architect ought to receive information bearing on good plumbing, pointing out the necessity of spending a little less for builders' hardware, if necessary, instead of slighting the plumbing. They ought to be given literature which would aid them in determining the best goods for the special purposes they have in view.

"The daily newspaper reader ought to be given little

practical talks on the subject all along, so that when he rents a house, or prepares to build, he will have his mind made up to buy good plumbing, and to have a drainage system that he can rely upon. The investment value of quality work of this kind could be pointed out, and the attention of the public drawn to the idea that this feature of the equipment of a house should be examined more closely than any other before buying or renting.

"In a word, my belief is that by co-operative work along this line by the plumbers' association, a definite and measurable improvement in the conditions under which we are working can be developed. The association is the logical medium through which to handle the undertaking, since in order to be effective, it must be disinterested, and not boost the individual interests of any one firm. But everybody in the association would benefit, because the names of members would be appended.

"Constant pegging away along this line would mean also that membership in the association would have greater value than it otherwise could have. It would teach the public to look for membership in the organization as a guarant e of quality service, and as in other cases would make the association of greater value to every member.

"If we know that a lawyer is not a member of his bar association, or that for some reason or other the medical organizations do not include on their lists a certain physician, we are likely to decide that there must be something wrong with those practitioners. There ought to be as much value in membership in the master plumbers' associations as in any other similar bodies, and we have an opportunity to develop it."

Co-operative publicity is one of the big movements of the day. It is being applied, chiefly for educational purposes, to many lines of endeavor. If the plumber quoted is right, it has a place in this field. And if he is correct in his conclusions, every local association has a chance to undertake something for the good of the public, the trade at large and its own members in particular.

CASTING FOR CONTRACTS.

By Thomas G. Wade.

I know a very successful man who to me presented a mine of possibilities as a source of "secrets to success." Pleasant faced, broad shouldered, clear eyed, he was a business man of the square-jawed fighting type.

He mentioned to me one day his keen admiration of the trout—its grace, strength and speed and above all that alertness which makes it the gamest of all the finny tribe.

I was surprised to hear him speak so feelingly upon a subject of what to me represented recreation, associated with timbered slopes, mountain streams and moss grown rocks.

In reply to some such suggestion he told me, "My dear boy, look at me; I'm strong physically, my liver is good; my complexion clear; I fish for trout every day of my life—the wariest, shrewdest, hardest fighting trout in the world," and a little wrinkle twitched at the corners of his eyes. "I never have caught a sucker. My trout are big business contracts; they are scarce. My trout are men; they are wary; my bait is the fair quality of my goods—my services. My hook is my knowledge of human nature—see how they blend. The trout must be there and consequently I find myself continually hunting the 'holes.' I have studied these until I have, like your ordinary trout fisherman, come to scent them—to know them by a thousand outward signs. Having found my hole I set about casting with my bait, and, oh, how carefully it must be selected! The seasons affect it—political unrest—the financial situation; what was once an alluring bait in that hole would go absolutely without a strike now, and vice versa. And then the casting—the care not to frighten, meeting caution with caution, pitting a developed mentality against the shrewd, natural instinct, developed by constant danger and long experience in self protection, and then the actual battle. The keen feel of a taut line and a quivering rod has nothing, my boy, on the thrill that comes of personal contact with men of caliber, of judgment, of brains.

"Sometimes I don't land him, yet I never lose, because, you see, I always analyze his fight, and figure to a nicety just how he managed to get away. Worry? No! No more than you would at the loss of a speckled beauty; indeed I doubt if as much. Rest? Why rest when every day is full of recreation, of thrills that give pleasure without hurt, mentally or physically? Fresh air? I get it in copious quantities in my car in the morning, and out of my office window. Tired? Yes, just as you would come in dead tired after a glorious day in the woods."

I have gleaned occasionally a striking truth from the great authors—the Bible is full of parables, the beauty and truth of which are undoubted. I have read much and been much impressed, but from this kindly faced man of affairs I believe I have learned the profoundest of all truths; the secret of long life, of kind-heartedness, of geniality; the secret of right living, and withal the secret of success.

OBITUARY.

John Stevenson Boyd.

John Stevenson Boyd, for 35 years prominent as a master plumber in the Roxbury and Jamaica Plain sections of Boston, died at his home in Roslindale, in that city, on October 24. Death was due to heart trouble with which he had been afflicted for some time. Mr. Boyd was a member of the Master Plumbers' Association. He is survived by a widow and five daughters.

H. R. Dunlap.

H. R. Dunlap, who was the oldest master plumber in New Castle, Pa., and the senior member of the plumbing concern of H. R. Dunlap & Co., died at his residence on Walnut Avenue, in that city, recently, of heart failure, resulting from acute indigestion caused by a stroke of apoplexy some years ago. He was sixty-nine years of age and was able to be at his place of business up until a few days before his death. Mr. Dunlap was a veteran of the Civil War and was active in all military affairs in his home city. Interment was made under the auspices of the Union Veteran Legion.

OLD METALS.

Dealers' buying prices in New York are:

Light copper	$13.75 to $14.00
Strictly crucible copper	15.50 to 15.87½
Uncrucibled heavy copper	14.75 to 15.12½
Uncrucibled copper wire	15.00 to 15.12½
No. 1 machine composition	12.50 to 12.87½
No. 1 brass turnings	9.00 to 9.12½
New brass clippings	10.75 to 11.12½
No. 1 composition turnings	11.25 to 11.50
Cocks and faucets	10.75 to 11.00
Light brass	7.50 to 7.75

Agricultural Plumbing—Discussing Mr. Slocum's Advice

By a Critic

We have no desire to antagonize Mr. Slocum's opinions, recently published in the "Gleaner" and noted in "Domestic Engineering" of October 12th, on plumbers in general and plumbing in particular, since every man is entitled to his own opinion; but it would seem in this case that there is considerable danger attached to any attempt on the part of the farmers to follow out these doctrines and it would seem that the farmer should at least be given clearly to understand, both the dangers resulting from an imperfect installation of soil piping and the excessive liability to such imperfections when the work is done either by an unskilled mechanic or one not thoroughly experienced in sanitary work and the requirements of the same.

For instance, it would be absolutely laughable to advise any one not familiar with lead work to make a wipe joint, and the crawling out of this difficulty by advocating all screw joints is simply an admission that the farmer is incapable of making such a joint (which is quite surprising when it is taken into consideration that according to the rest of the article a farmer can do all of the other plumbing work). If the farmer can not wipe a lead joint is he any more liable to get an air and gas tight joint in the cast iron pipe with molten lead and oakum?

Farmers' Plumbing.

This advocating of the performing of sanitary work by inexperienced persons without proper supervision is directly contrary to the rules and regulations of practically every city where the subject has received careful thought and study, and is most emphatically expressed in unmistakable form in the shape of the demand in many plumbing codes that **"no plumbing shall be done by persons who are not licensed plumbers"** or other similar wording. It is universally recognized that safety in plumbing work lies wholly in intelligent installation by efficient and experienced workmen under careful supervision.

Nobody in the plumbing business would be such a lunatic as to haul in at random a man off the street, hand him a plumbing code and say "Here are your tools and pipe, now go ahead and put the plumbing in on that new house over there." And even the farmers will agree that they possess no superhuman intelligence and that an average man under the above conditions would at least be **just as capable** of installing plumbing as the average farmer—certainly the information usually contained in a good plumbing code is much more definite and complete than anything that Mr. Slocum could, has, or probably will, publish.

Aside from the serious import of these opinions we have the humorous complications which might well develop from the application of farming methods to plumbing work. As is well known every occupation has its own method of accomplishing its ends and it is safe to say that no one but the plumber would cut off a piece of pipe with a pipe cutter—a metal worker would probably use a hack saw; a steel man, a cold chisel; a chemist might employ acid; a small boy would probably put it on the street car tracks, while a **farmer** perhaps would stick it in the ground and carefully clip it off with his reaper or mower. In case it were accidently cut too short, our rural friend might well be expected to apply standard farming methods farther, and by placing it in rich soil with frequent waterings to increase its length through entirely natural growth. Possibly a little fertilizer would expedite matters.

Increasing Its Height By Natural Growth.

Assuming for the sake of argument (although it is not a fact) that Mr. Slocum's title of "plunderers" instead of plumbers is deserved, is it up to the farmer, who is noted the entire length and breadth of the land for putting the smallest and the poorest of his apples in the bottom of the barrel, to be the one to cry "plunderer?"

If the Farmer Can Do His Plumbing, the Plumber Will HAVE to Do His Farming.

When the plumbers start to raise their own corn, potatoes and wheat to avoid the high cost of living that the farmer is now collecting, it will be time enough to shout, but the tenderest toes always belong to the man who is not in the habit of having them trodden upon, preferring to do all the treading himself.

The farmer, today, however, is not the well-known gold brick, lightning-rod, unsophisticated character of years ago, but is a quite wide awake individual, with ample intelligence to realize that a plumber is not a product of ten lessons published in **any** magazine and that one case of typhoid or diphtheria is likely to cost him more than his entire plumbing equipment put in by a competent man; certainly sickness and death are not to be fooled with.

The farmer will doubtless also realize that these dangers lurk only in the improper installations and that sanitary plumbing is as safe as science can make it and infinitely more healthful and convenient than any of the older substitutes and makeshifts which were devised before proper study and thought had been given to the subject of **real** sanitation.

COLLEGE PROFESSOR COMMENTS ON FARM PLUMBING.

Editor "Domestic Engineering":—In the October 12th issue of "Domestic Engineering" I find an article upon the subject of farm plumbing taken from a Michigan farm paper, and I also note your remarks upon the subject. It is in regard to just such matters as this that I am undertaking to make thorough investigation.

You, of course, realize the difficulties that a farmer will encounter when he undertakes to install a complete sanitary water sewerage system upon his place. First of all, his own lack of knowledge upon the subject is a serious handicap to him and to engineers or plumbers who undertake to assist or advise him; secondly, the natural conditions or rather the isolation of the plant make it a somewhat more difficult problem than the ordinary household work of the city; and third, the expense which seems unduly large, of course, to the farmer who has never invested more in a water supply system than a moderate outlay for hand pumps and perhaps not even for this convenience.

I, therefore, conclude that Mr. Slocum will do more good in attracting attention both of the plumbing trade and of the rural population to the needs—I may say absolute necessities—in the way of sanitary plumbing upon the average farm. If we can convince the farmer that the sanitary conditions of his place are quite as bad as those of his city neighbor, we will have made a great step in the right direction. It will then be quite time to take up the matter of costs of fixtures and of percentage of profit that enters into the sale of such commodities.

From personal experience, I find that the most costly investment that can be made in the way of plumbing installation, is a "cheap job." I do not mean to say by this that the farmer should not have a more or less knowledge of what is required, its method of installation and material that should be used. He should even know how to make minor repairs that may be required from time to time, or small extensions of the system, but I quite agree with you and the other members of the trade that the farmer should not undertake to become a plumber, and I think, as a rule, he does not desire to do so. All he asks is fair treatment. Therefore, the plumber should remember when he undertakes to install a job in the country, that the farmer does not care to pay him for the time he consumes going to and from the job. In other words, the farmer should not be made to pay a royalty upon his country installations, nor does he care to have the installation made in such a complex way that none but the most expert can repair break-downs or understand the system should it fail in any way. The entire layout of the job should be made as simple as possible and it should always be borne in mind that the country water system is more liable to damage from freezing than a city system and that there are many other things that may cause interruption in the service, such as neglect on the part of the farmer and ignorance as to its proper care, which would only be an instance in the city but is a catastrophe in the country. The fixtures should be so simple and substantially constructed that there would be little liability of failure on their part. Cocks, faucets and other parts that are liable to wear should be of the most substantial sort. Wherever possible, the plumbing should be exposed, provided this does not mean that it will be subject to freezing temperatures.

The source of water supply, will of course, vary with the conditions that are encountered and this will readily constitute another problem which I suppose has been taken up by Mr. Slocum in his articles. I shall give this series of articles careful consideration and will investigate other literature upon the subject as soon as possible. Any conclusions that I may come to, in regard to country plumbing I will be pleased to let you have. In the meantime I hope you will bear in mind that I an interested in this subject and let me have suggestions or views that you think will be of assistance to me.

I have written this letter merely to show my interest in the subject and hope that you will co-operate with me in placing the best information of this sort before the farmers of Kentucky and the students at this institution.

The interest on the part of the rural population in the matter is growing so rapidly that I fear unless the subject is given careful study, serious mistakes will be made by those who are making investments along this line, and it is with this view to protecting both the purchaser and the seller who may appeal to me for advice, that I have undertaken to make an especial study of the subject relative to country life.

James A. Farra.
Division of Farm Mechanics.
Kentucky College of Agriculture,
Lexington, Ky.

NEW BUSINESS VENTURES.

Bar Harbor, Me.—Frank T. Young Co. has been incorporated with a capital of $10,000, to conduct a general plumbing and heating business. The officers of the company are: Frank T. Young, president; John P. Carney, secretary and treasurer.

Charleston, W. Va.—John Kesterson has opened a new plumbing establishment in the I. O. O. F. building, at the corner of Virginia Street and Pennsylvania Avenue. The new business will be conducted under the name of the Citizens' Plumbing Co.

Forest City, Iowa.—The Secor Plumbing Co. is the name of a new concern just opened in this city, under the direction of M. V. Secor. The company has leased the basement of the Summit Hotel where sample and stock rooms and a work shop are being fitted up.

Her Education.

Mrs. Dashaway: How long had you known your husband before you were married?

Mrs. Gnaggs: I didn't know him at all. I only thought I did.—Philadelphia Record.

Some Observations on Method in Water Pipe Laying

By W. H. Wakeman

Nearly every day I pass close to a water pipe laid as shown in Fig. 1, which is a plan of the arrangement, or at least it would be if the reader was above it, looking downward. Inasmuch as it is an overhead pipe, the illustration is really a "dog's eye" view. This term is commonly used in descriptions of automobiles, to signify the appearance of running gears, as they appear to a dog, if he should look upward as he is under the machine. Of course it is equally appropriate when applied to other objects when viewed from underneath.

I have often wondered why the plumber used so many ells, as they create a great deal of friction in a water line. Instead of using three 90 deg. ells why did he not use two 45 deg. ells as illustrated in Fig. 2? The former shows six threads and three fittings, while the latter has four threads and two fittings. It allows water to pass with less reduction of pressure by friction, which is an important consideration where the full pressure is not sufficient to give the required supply on the upper floor of a public building.

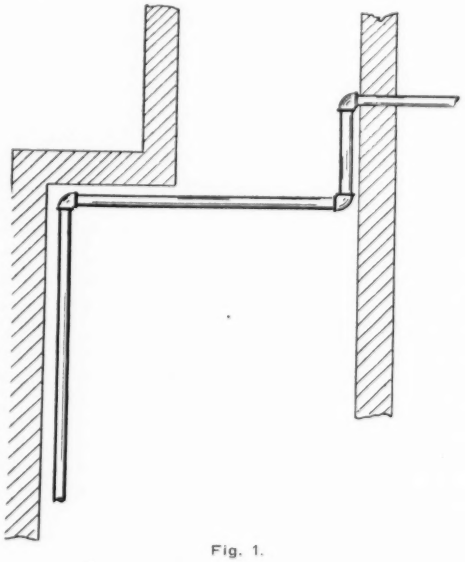


Fig. 1.

One of the water mains in my plant did not supply as much water as it ought to, which was partly due to corrosion, as it was laid a long time ago. On digging it up, I found the arrangement of piping shown in Fig. 3 which is an elevation. Water comes in from the left hand and must pass through three 90 deg. ells to reach the vertical pipe. Fig. 4 shows in full lines a much better arrangement in which the head or pressure lost by friction is less than in Fig. 3. There is nothing in the surroundings to prevent the installation of this system, and it shows much improvement over the present arrangement, but it was not adopted. Dotted lines in the same illustration show how the pipes were put in. A gate valve was used at "2" with a tee above it, from which water can be drawn to prevent freezing after "2" is closed. This was used in preference to a stop cock, as it can be opened and closed without a wrench, and it is less liable to be corroded fast in place if not used for several months.

In a certain case the building was only two stories high, and the water pressure was 60 pounds to the square inch. Here is was not necessary to plan the piping so that water would be carried with the least possible friction, because there was more pressure than was wanted, hence a reducing valve was installed on one line. With a four

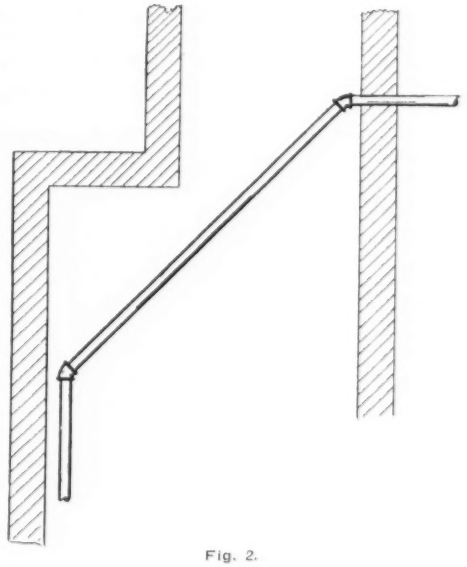


Fig. 2.

story building, and 20 pounds water pressure, the case is quite different, yet some plumbers do not take these conditions into consideration when installing the water pipes. It will pay to do more or less calculating along this line in order to save time and fittings, regardless of the benefits to be derived by customers. Of course, it is possible to carry this to excess, and occupy more time

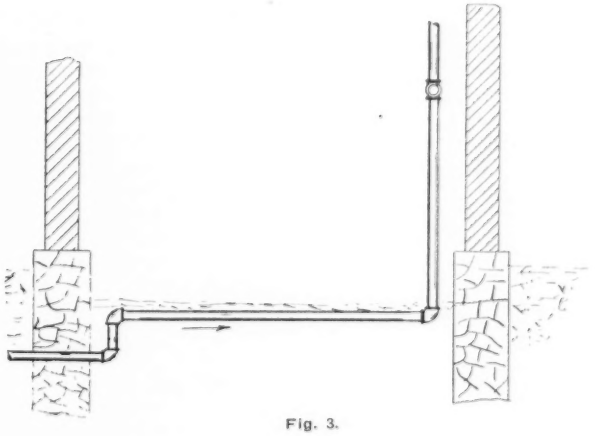


Fig. 3.

in making plans and calculations, than will be saved in actually doing the work, but there is little danger of such results.

The general rule for piping a building for water is to bring the main into the basement, or cellar, then carry

the risers to the highest point, and make the required connections for the several floors. As a natural consequence it is possible to secure water on the first floor, under all conditions, but if water is flowing here, it is impossible to get any on the top floor.

Somebody invented a different plan whereby water was to be always available on the top floor. It is illustrated in Fig. 5. A water main (2) enters the cellar, and is at once carried to the highest point without outlets of any kind. It is then turned downward, as shown, and provision made for drawing water on each floor. The advocates of this system claimed that inasmuch as water comes to faucets on the top floor first, there will always be a supply on hand, and of course there will be plenty on the first floor, because water always flows to the lowest level. I have watched the practical application of this system with interest, but according to reports from it, there is still chance for improvement.

Assume that there is just enough pressure to carry water over the highest point, and that none is flowing out of the faucets. This fills the outlet pipe "3" from bottom to top. Somebody opens a faucet on the top floor, and as there is water in the pipe above it there is a good discharge through the faucet. In many cases only a small quantity of water is wanted at any one time, hence the want is supplied before the supply in the pipe

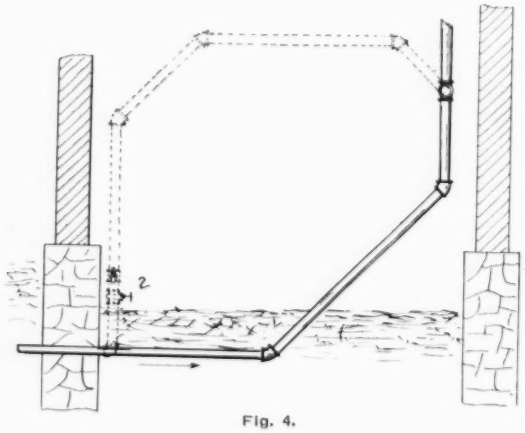


Fig. 4.

is exhausted, and, of course, this is more satisfactory than to open a faucet and get no water at all.

However, there are conditions which give less satisfactory results, as follows: Somebody opens a faucet on the first floor, and as there is a high head of water above it, water flows out freely, until the faucet on the top floor is no longer under pressure. This faucet is opened to draw water, but air is drawn into it, to the disgust of the party that wants water to come out. Now there may be a reasonable pressure in the basement, but not enough to send a full supply over the top of what is really a siphon, as a study of the illustration will show. The results of experiments along this line prove that there has been no change in the laws of nature during the past few years, hence if water is wanted on the top floor of a building a plentiful supply under sufficient pressure must be provided. The details of piping have more or less effect on the results as above explained, but such changes as Fig. 5 suggests cannot completely change the whole situation, although some people seem to believe that it is possible to "steal a march on nature," if you only know how to do it.

In another case water could be secured from a faucet on the second floor, although the flow indicated that the pressure was light at that point. Complaints were frequently made that water could not be secured here when wanted. I attached a pressure gage to one of the pipes on the lower floor, and the pressure indicated by it,

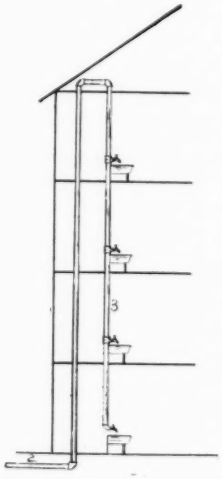


Fig. 5.

showed only enough to send water a few feet above the second floor outlet, when calculating that each pound would elevate it 2 feet. When water was drawn in the basement, the pressure was lowered 4 pounds, hence none could reach the second floor outlet. This simple experiment demonstrated the cause of failure, and resulted in the installation of a new water main. If the main had been large enough to maintain the full pressure regardless of the amount drawn from the lower outlets, then people on the second floor would have made no complaint. The point is that pressure alone is of little value, if the volume is deficient.

The water company of a city usually decides the size of tap that will be allowed for each building to be supplied, and naturally they keep the size down as low as possible in every case. The consequence is that an ordinary dwelling house in which only one family may live, is allowed a $\frac{5}{8}$ inch tap, and a public building, or a school, where 500 people spend a greater part of the day in various occupations, some of which require a considerable water, is supplied through a tap of ex-

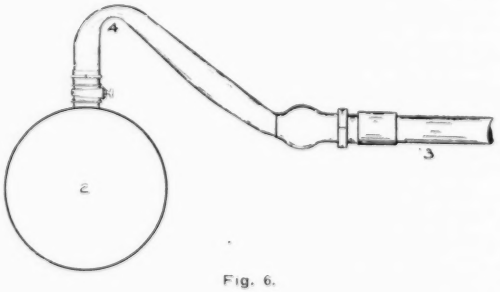


Fig. 6.

actly the same size. Protests against this unsatisfactory rule, sometimes result in the installation of two taps for the larger building, but it is difficult to secure a larger size. Where the owner or manager of a building is especially earnest in his efforts to secure better service, he may secure a $1\frac{1}{4}$ inch tap, which is a great

improvement, because it is equal to four ⅝ inch taps. This point is worthy of special mention, because it is frequently overlooked.

Laying water mains from the main line to houses, etc., is rough work, and but little time is spent in making calculations for it, consequently a pliable joint is generally used to make the first connection, consisting of a piece of lead pipe. It is illustrated in Fig. 6 in which "2" is the street main, and "3" the house main. The lead pipe was bent at "4" in such a careless manner that its capacity is greatly reduced, and as such a connection is located in a trench where it is not seen, unless somebody makes it his special business to get down near it, and take careful observations, the defect is not discovered. After it is once covered with earth it will not be dug up until a new house main is wanted, or some change in the street brings it to light. Even if the boss plumber who installed it is perfectly honest in his intentions to give his customer good service, a careless workman may spoil the job as above described, and cause much trouble. In some cases the tap is put into the side of the street main, facing the house main, hence there is one less turn to make, and less friction accordingly.

OIL MAKES CONCRETE WATERPROOF.

A cement which will resist water, and which therefore will not crack, appears to have been discovered by Logan Waller Page, director of the Office of Public Roads, and his associates. This discovery is that mixing a proportion of about 10 per cent of petroleum residual oil with ordinary Portland cement, sand, and stone or gravel—the familiar concrete—renders the concrete water proof without in the least impairing its tensile strength. The importance of the discovery can hardly be overestimated, for the use of concrete as a substitute for wood and other material has become universal in this country, but the tendency of concrete mixed only with water to crack has been a serious fault.

While experimenting in an attempt to develop a non-absorbent, resilient and dustless road material, one capable of withstanding the severe shearing and raveling action of automobile traffic, the investigations of Director Page led him into this very promising discovery. He found that when a heavy mineral residual oil was mixed with Portland cement paste, it entirely disappeared in the mixture, and furthermore, did not separate them from the other ingredients after the cement had become hard. The possibilities of oil-cement mixtures for water-proofing purposes were recognized and extensive laboratory tests were begun immediately to determine the physical properties of concrete and mortar containing various quantities of oil admixtures.

As an example of a laboratory test showing the non-absorbent and non-permeable character oil-mixed mortar when subjected to low pressure, four mortar vessels 8 inches in outside diameter, 2½ inches high and about ½ inch thick, after hardening in moist air for about one week, were immersed in water to a depth of about 2 inches. A mortar mixture of one part of cement to three parts of sand was used. Vessel No. 1 contained no oil in the mixture. About one minute after immersion a damp spot showed on the bottom of the water-mixed vessel. After one hour the whole vessel was wet, even above the water level, since the water had climbed by capillarity. Within a few days the water had penetrated the plain mortar vessel until the water level inside was the same as that outside. The remaining three vessels made of 1:3 mortar and mixed with 5, 10, and 20 per cent of oil, respectively, have remained perfectly dry on the inside during immersion for one year.

A service test of the oil-mixed mortar was made in the new vault of the United States Treasury Department constructed in the fall of 1910, a vault 112 feet long by 18 feet wide. The side walls of this vault contain 10 per cent of oil based on the weight of cement in the mixture. The roof was constructed of ordinary reinforced concrete with about three inches of 10 per cent oil-mixed concrete placed on top. For months the roof of this vault was subjected to several feet head of water without showing any signs of leakage.

Another vault in the north end of the Treasury never has been available for the storage of anything of value because of leakage. Oil-mixed concrete was placed on the roof of this vault, and it is perfectly dry at the present time. Numerous floors in the sub-basement of the Treasury building and a floor in the office of Public Roads have been constructed of 10 per cent oil-mixed concrete and have remained absolutely free from dampness. A tank in the Office of Public Roads, composed of one part of cement, two parts of sand, and four parts of stone, mixed with 10 per cent of oil based on weight of cement, along with several other tanks used for various purposes, has remained absolutely water-tight.

It has been shown that the admixture of oil is not detrimental to the tensile strength of mortar composed of one part of cement and three parts of sand when the oil added does not exceed 10 per cent of the weight of the cement used. The tensile strength of mortar and of concrete suffers slightly with the addition of oil, although when 10 per cent of oil is added, the decrease in strength is not serious.

Concrete mixed with oil requires about 50 per cent longer to set hard than does plain concrete, but the increase in strength is nearly as rapid in the oil-mixed material as in the plain concrete. Concrete and mortar containing oil admixtures are almost perfectly non-absorbent of water, and so they are excellent materials to use in damp-proof construction. Under pressure, oil-mixed mortar is very efficient in resisting the permeation of water. Laboratory tests show that oil-mixed concrete is just as tough and stiff as plain concrete, and furthermore its elastic behavior within working limits of stress is identical with that of plain concrete. The bond or grip of oil concrete to steel reinforcement is much decreased when plain bars are used. Deformed bars, however, and wire mesh or expanded metal will reinforce this material with practically the same efficiency as in ordinary concrete.

Easy.

Most anyone can be an editor. All an editor has to do is to sit at his desk six days in the week, four weeks in the month, and twelve months in the year, and "edit" such stuff as this:

"Mrs. Jones of Lost Creek let a can-opener slip last week and cut her-self in the pantry."

Suspicious.

A plumber went to the house of a wealthy stockbroker to make repairs. He was taken by the butler into the dining room, and was beginning his work when the lady of the house entered. "John," said she, with a suspicious glance toward the plumber, "remove the silver from the sideboard at once and lock it up." But the man of lead was in no wise disconcerted. "Tom," he said to his assistant, "take my watch and chain to my missus at once." —Exchange.

WILL THE STEAM LOOP WORK HERE?—HARDLY.

Editor "Domestic Engineering":—In your issue of Aug. 10, 1912, there appeared an article on "The Steam Loop," by Thomas Tait. We enclose a rough sketch (Fig. 1) showing the problem we are up against. Will the steam

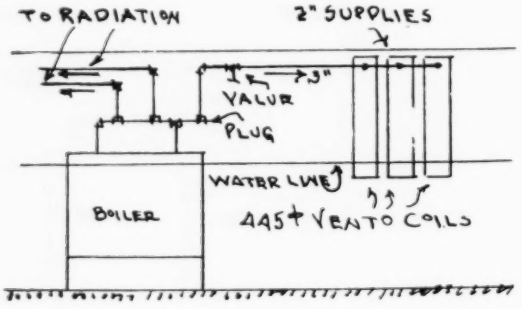


Fig. 1.

loop work on this? If so, how high should it be and what should be the size of the pipe? The bottom of the vento will be about four or five inches below the water line of the boiler and there will be from two to five pounds of steam. A. H. S.

Marshall, Minn.

Fig. 1 illustrates the problem you are up against as we understand it from your rough sketch. While the steam loop might be used, we would not recommend it for this job, as there is an elegant chance to freeze the condensation in the vento sections, should the loop quit operations, and the fan continue to deliver cold air through the heater sections.

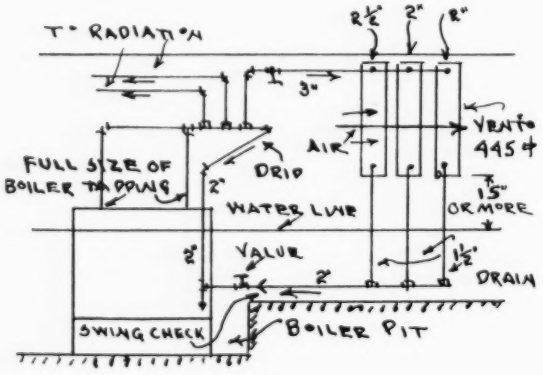


Fig. 2.

Fig. 2 illustrates our idea of how you can handle your problem cheaply, and successfully. Pit the boiler so as to get 15 in. or more difference between the boiler water-line and the bottom of the heater sections, then you will be safe. You should give the first section of the heater, that the incoming cold air strikes, a 2½-in. steam supply. It will be well to place a swing check on the wet return, as the rapid condensation that will occur, when you first turn steam into the heater, might tend to create a partial vacuum in the heater, which might have a tendency to draw water up into the heater from the boiler. You will notice that Fig. 2 shows the boiler header dripped. This will give you dry steam, as any water carried up with the steam will have a chance to drip back into the boiler, and will partially eliminate the possibility of water being carried into the mains. We have not shown the air valves on the heater sections, but you should not overlook them.

A NOISY HOT-WATER JOB.

Editor "Domestic Engineering":—I am sending you a sketch of a job of hot water circulation, which I made about three months ago and same worked satisfactorily until two weeks ago. Now it pounds loudly.

You will see in the sketch how I have them connected up. Now, if I use a No. 1 heater it pounds, but while using No. 2 it does not. You will note I have valves on the cold supply to both heaters, so that neither one or the other can be used separately.

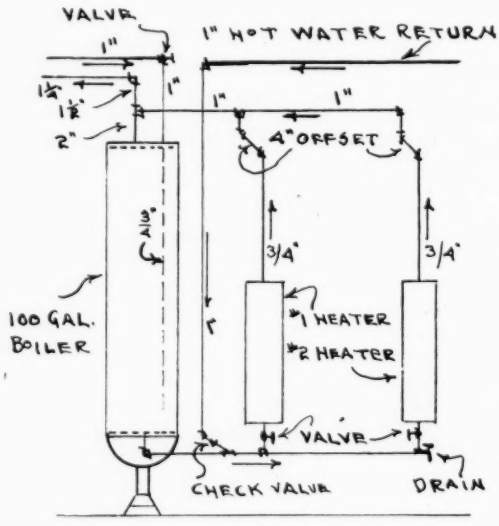


Fig. 1.

We have taken down both heaters thinking there was a stoppage in No. 1, but found it O. K.

If you can tell me how to remedy this trouble, kindly do so. If I have not explained the trouble fully, kindly let me know in your next issue. B. C.

Referring to Figure 1, we are just a trifle puzzled as to the nature of your trouble, as you say, the installation has worked satisfactorily until recently. It may be that there is some dirt below the valve supplying cold water to No. 1 heater, which partially chokes the supply, or, the valve disc may be loose, which would cause a rattling sound. Again, the gas supply to No. 1 heater may be

larger than to No. 2, and if the ¾ in. pipe leading to the boiler is not large enough to handle the hot water that the No. 1 heater will furnish, a pounding noise would occur, or, the ¾-in. pipe may be choked, and the hot water tries to back out of the heater through the cold water supply. If these comments do not help you to locate the trouble, we believe it will be good policy to increase the ¾ in. piping from both heaters to 1 in., and the 1-in. pipe between No. 1 heater and the boiler to 1¼ in. Your sketch does not show the size of the cold water supply to the heaters, but we presume it is 1 in. The fact that the installation has worked, leads us to believe you will find some remedy for your trouble in the above suggestions. The hot water pipes from the heaters must pitch up to the boiler, so as to prevent trapping and forming air pockets.

We believe it would be worth while interchanging the heaters, and then if No. 1 heater pounds while connected up in No. 2's place, or No. 2 pounds while connected up in No. 1's place, you can determine whether the trouble is in the piping or in the heaters.

IS THIS SANITARY PLUMBING?

Editor "Domestic Engineering":—The acompanying sketch, Fig. 1, shows the arrangement of a small plumbing job, which came under my observation a few days

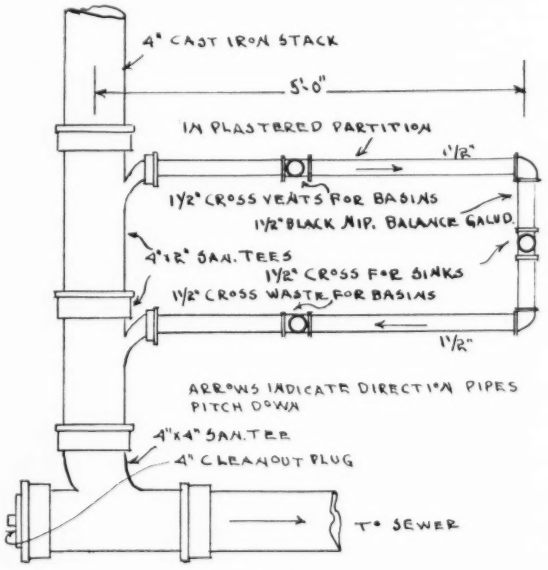


Fig. 1.

ago. Kindly tell me if this is sanitary drainage. I call it poor workmanship as plumbing, but probably I am not competent to sit in judgment in this case.

Utah. W. W.

Fig. 1 is certainly a poor installation, and was hardly put in by one that could call himself a "plumber," and be truthful about it.

While the use of a 4-in. sanitary tee at the foot of the stack may give good results, still, the use of a one-eighth bend and a Y will eliminate the sharp turn, and will tend to shoot the water towards the sewer. This is shown in Fig. 2. The 4-in. x 2-in. sanitary tee for the vent is dead wrong. This should have been a 4-in. x 2-in. Y. There is nothing to prevent the waste water from the sinks and basins shooting across into each other before starting for the 4-in. stack.

The use of 1½-in. galvanized pipe might be permissible, if the pipe ends were properly reamed, and the proper fittings used, and the general scheme shown in Fig. 2 followed. If there are no closets on the stack, a 3-in. stack would give better results than a 4-in., as there is not enough water passing through this piping to keep it flushed properly. There will not be enough water

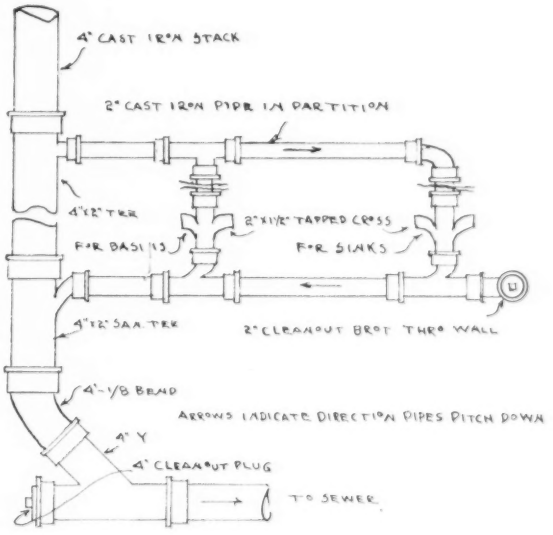


Fig. 2.

for a 3-in. pipe as far as that goes, but a factor of safety is allowed for the accumulation of grease in the piping. This amounts to considerable from sinks, in spite of every precaution that may be taken.

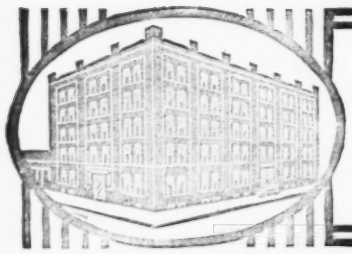
Fig. 2 shows a method of continuous venting that represents up-to-date practice. The sanitary crosses can be obtained either tapped, or with hub ends for caulking. There is no danger from siphonage, and every part is easily accessible for cleaning. We understand this installation is in a double house, having one sink and basin for each house, with the 4-in. stack in the corner of the dividing partition, and the waste and vent extended 5 ft. in this partition, behind the plaster.

When you called Fig. 1 "poor workmanship," you might have gone a little stronger, with perfect safety.

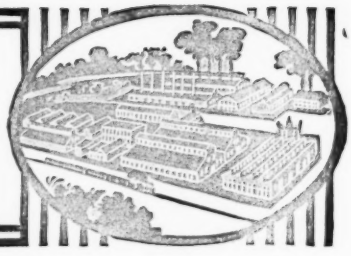
Suffolk, Va.—Graham & Fairer, of this city, have secured the contract to install a heating system in the municipal building here. Consideration $780.

Piqua, O.—Gerstmeyer & McKale have been awarded the plumbing contract for the new high school in this city. Their bid was $8,995.

Newport, Ky.—Walter Richards, of this city, has been awarded a large contract to do the plumbing in the Newport Turner Hall building, which is being remodeled with up-to-date plumbing fixtures. George F. Roth, of the Covington Architectural Iron Works Co., made the plans and the plumbing fixtures were selected by the Turner Society Building Committee. Thomas Canary, 204 West Seventh Avenue, has secured the contract for the plumbing of the palatial Thomas Melish residence to be built on LaFayette and Middleton Avenue, Clifton, O., in accordance with plans by Architect Arthur Huen, of Chicago.



News of Interest Among the Wholesalers and Manufacturers



WILL MANUFACTURE PLUMBING SPECIALTIES.

The Galion Brass & Bronze Co., Galion, O., has been incorporated with a capital of $75,000, to manufacture plumbing specialties. The incorporators are: C. J. Rath, Benjamin L. Sites, J. C. Brown, C. C. Coyle and C. J. Gugler.

WILL MANUFACTURE STEAM SPECIALTIES.

The Blasier-Sanborn Mfg. Co., of Utica, N. Y., has been incorporated with a capital of $350,000, to manufacture steam specialties. The incorporators are Frederick A. Klein, George W. Sanborn and C. Sanborn, all of Utica, N. Y.

DISTRIBUTING OFFICE NOW AT PHILADELPHIA, PA.

The selling department of the promotion of the Halsey thermostat heat regulator, formerly located at Lynn, Mass., will hereafter be in charge of W. W. Hoyle, of Philadelphia. Offices have been established at 1211-1215 Filbert street, in that city.

WILL MANUFACTURE RADIATORS AND HEATING SPECIALTIES.

The Carter Water Heating Manufacturing Co., of Providence, R. I., has been incorporated with a capital of $200,000, to manufacture radiators and heating specialties. The incorporators are, Isador L. Halman, Howard A. Cram, and Raymond Mowry, all of Providence, R. I.

WILL MANUFACTURE RADIATORS AND BOILERS.

The Safford Radiator Corporation, of Detroit, Mich., has been incorporated under the laws of Delaware with a capital stock of $10,000,000, to manufacture radiators and boilers. The incorporators are: Clarence E. Safford, Frank E. Singer and Jere T. Purdy, all of Detroit, Mich.

N. O. NELSON MFG. CO. OPENS HOUSTON BRANCH.

The importance of the business in Texas to the supply houses is well illustrated by the establishment of branch houses in that state. The latest is that of the N. O. Nelson Mfg. Co., of St. Louis, who have arranged for the immediate opening of a branch at Houston. It is to be located in the Tel-Electric Building on Preston Ave., an excellent location.

Several representatives of the company, including Mr. Nelson, went over the situation in Texas very carefully, and finally decided upon Houston because of its fine water and rail service. The stock of supplies is now en route, and the branch will be in operation within a few weeks.

LIKE NEW WATERWAY TRANSPORTATION.

Traffic managers of the plumbing supply houses of the Pittsburgh district are elated over the prospects of this new waterway transportation service being established in December, as was recently announced in this column. It has been arranged that just as soon as the first boat is placed in the Pittsburgh-New Orelans service, the supply houses will divert all shipments possible from the rail routes to the waterway route, for it is plain that the saving in freight charges to the buyer of supplies will result in a saving of hundreds of thousands of dollars annually.

LYNCHBURG PIPE & FOUNDRY CO. TO BUILD NEW PLANT.

The Lynchburg Pipe & Foundry Co., the $1,500,000 industry, which was recently located at Anniston, Ala., through the effort of the Chamber of Commerce of that city, has selected a site for its new pipe plant, and work on its construction will be started this month. Owing to the fact that all the steel mills of the country are overcrowded with work, there has been some delay in securing steel. All the necessary equipment is now being turned out rapidly at the Radford and Lynchburg plants of the same company, and it will be on hand as soon as the steel arrives. The pit for the foundry will be built of concrete, and the plant will be operated by electricity from direct motors.

MEETING OF THE EXECUTIVE COMMITTEE OF THE NATIONAL DISTRICT HEATING ASSOCIATION.

The Executive Committee of the National District Heating Association, consisting of R. D. DeWolf, of Rochester, N. Y., President; J. F. Lewis, of Detroit, Mich., 1st vice-president; J. L. Hecht, of Chicago, 2nd vice-president; E. Darrow, of Indianapolis, Ind., 3rd vice-president; D. L. Gaskill, Greenville, Ohio, secretary; A. D. Spencer, of Detroit, Michigan, W. A. Wolls, of Columbus, and H. R. Wetherell, of Peoria, Ill., met in their mid-year session in the city of Indianapolis, on October 30th and 31st.

The object of the meeting was to arrange the program for the fifth annual convention and to fix the time and place for holding that convention in 1913.

After considering invitations from Washington, D. C., Baltimore, Md., Niagara Falls, N. Y., Chicago, Ill., and other cities, the committee unanimously selected Indianapolis, Ind., as the place to hold the fifth annual convention and fixed the time on May 27, 28, and 29, 1913, with headquarters at the Claypool Hotel.

Papers upon the following subjects were arranged for that convention:

District Heating on the Pacific Coast.

Line Condensation in Different Forms of Construction.

Results of Using Bleeder Turbines.

Appraisal of Heating Properties.

Station Designs with Special Reference to Overload Capacities.

Uses and Abuses of Public Service Commissions.

Hot Water Heating for Residence Districts.

Public Policy.

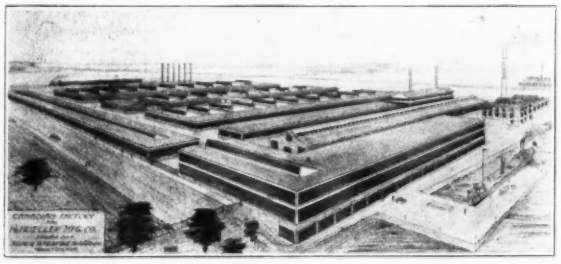
Also two other papers, the subjects to be announced later. In addition, reports were asked from the standing committees on Meters, Station Records, and Rates. The Report of the committee on Meters to call for experience of those stations that have changed over from flat rate to meter rate.

The committee also transferred a number of members from the active list to the Associate class, the members being engaged in business as defined by the Constitution applying to associate membership.

All members of the committee were present and ample guarantees were given the committee from the commercial organizations of Indianapolis that plenty of funds would be available for entertainment purposes.

NEW CANADIAN PLANT OF THE H. MUELLER MANUFACTURING COMPANY.

The H. Mueller Manufacturing Co., of Decatur, Ill., and New York City, will shortly be able to supply Mueller brass goods made in Canada, to their trade across the border. For their new factory at Sarnia, Ontario, is about



Plant of H. Mueller Mfg. Co. at Sarnia, Ont.

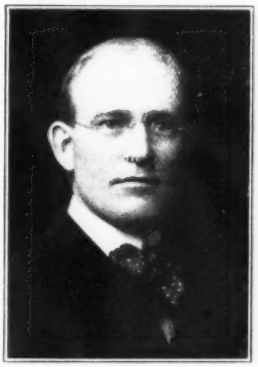
ready to begin business, and the output will be increased rapidly.

The location of the plant is ideal, being situated on the St. Clair river, with dockage facilities, and with switch

Oscar B. Mueller.

tracks on the Pere Marquette Railroad as well. The site consists of seventy-three acres, part of the buildings on which were previously used as a factory in another line. The city itself is but sixty miles north of Detroit, and directly opposite Port Huron, Mich. It offers attractive residential advantages and is a flourishing business place.

A factory building 44x250 ft. is the nucleus of the plant.



Carl G. Heiby.

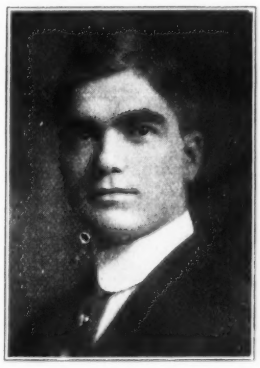
G. Palmer Harry.

Two new buildings are about completed, one, the foundry, being 60x190 ft. and the other, the brass finishing department, being 60x256 ft. These with the power plant will

Fred L. Riggin.

comprise the present plant, although the bird's-eye illustration shows the plant as it will look when the contemplated additions have been completed.

The buildings are of concrete and steel construction,



Robert S. Thrift.

Arthur Carroll.

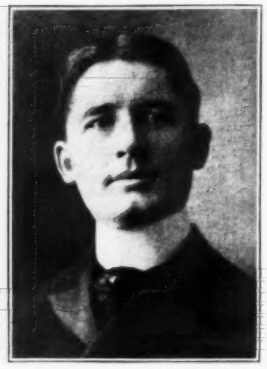
making them fireproof. The lighting and ventilation is most modern, the roofs being of the saw-tooth type. Steel sash make up much of the wall space of the buildings.

Within these buildings has been installed a large quan-

tity of new machinery, much of it automatic, which will produce the identical designs now made at the Decatur factory, duplicate patterns being in use. About 150 men will be employed at the start, and the output of the plant will amount to about $150,000 annually. Natural gas is to be used as the fuel to generate power for the plant.

The establishment of the factory makes it possible to cater to the needs of the ever-growing Canadian trade in a way that will be appreciated by them. The business in the Dominion is already well-established, so that the output will be sold as fast as made.

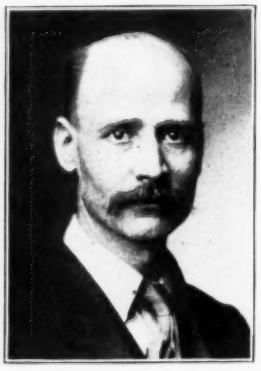
The organization of the H. Mueller Manufacturing Co., Ltd., of Canada, differs somewhat from that of the parent company in that some of the department heads become stockholders and directors. The officers are Oscar B. Mueller, president and general manager; Carl G. Heiby, vice-president and superintendent; Adolph Mueller, treasurer; Fred L. Riggin, secretary, assistant treasurer and assistant general manager. The directors are: Philip Mueller, Fred B. Mueller, Adolph Mueller, Oscar B. Mueller, Carl G. Heiby, Fred L. Riggin.



W. C. McIntyre.

C. H. Laughlin.

Oscar B. Mueller, who has been in charge of the eastern division at New York City, has already established a residence at Sarnia and will manage both offices. Most of the other department heads will move from Decatur to Sarnia.



P. W. Blair.

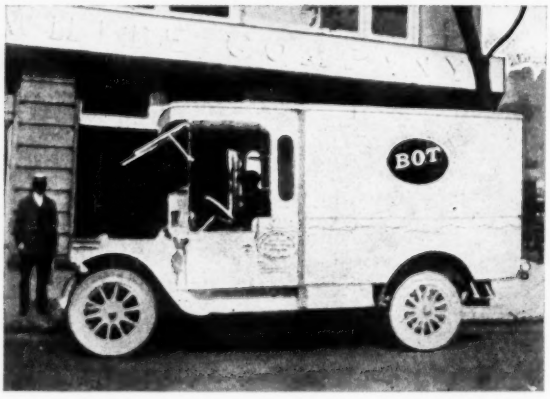
At Decatur, Carl G. Heiby has been foreman of the tool making department, and Fred L. Riggin manager of the stationary department and secretary to the company's officers. Richard Lau becomes foreman of the new foundry; W. C. McIntyre, foreman of nickel plating, polishing and buffing; P. W. Blair, foreman of the brass finishing department; C. H. Laughlin, foreman of ground key work; Arthur Carroll looks after stock up-keep and C. W. Padgitt from New York takes charge of shipping and stock. G. Palmer Harry, formerly in the advertising department, goes to the sales department at Sarnia, and Robert Thrift takes charge of accounting and collections.

The city of Sarnia by this change acquires some notable talent in other lines. Mr. Heiby is recognized as an accomplished tenor soloist. Mr. Thrift is an all-around athlete, and Messrs. Harry and Riggin are tennis players of no mean accomplishments.

A DISPLAY ROOM ON WHEELS.

For some months past the American Sanitary Works Organization, with offices at 105 W. 40th street, New York City, has had traveling over the country a unique display room, in the form of a White automobile. To the uninitiated the vehicle resembles an emergency ambulance, but instead of the familiar red cross sign, is one with the initials B. O. T.

Within the car, which is electric lighted, is a comprehensive display of the line of B. O. T. water closet combinations, all connected to water pressure, and adjusted to show the mechanical operation under actual conditions.



An Unusual Plumbing Goods Display Room.

This organization comprises the factories of the American Sanitary Works at Washington, N. J., the John Maddock & Sons and the Bellmark Co. potteries at Trenton, N. J., and the B. O. T. Mfg. Co. of Toronto, Can. The line is sold through representative jobbers over the country.

NEW CATALOGS OF TOOLS AND BOOKS.

The well-known firm of R. M. Starbuck & Sons, of Hartford, Conn., have just issued two new catalogs of interest to the trade. One of these is entitled "Starbuck Plumbing Tools," and its 48 pages list and describe many standard tools in daily use by the trade. The 24 pages of the Catalog of Publications lists a number of books that are popular with those who know of them, and also includes illustrations and prices of accounting systems, with necessary blanks, etc.

Lafayette, Ind.—A. E. Werkhoff has been awarded the contract for the installation of plumbing, heating and drainage system at the Rose Gear & Tool So's. factory. Consideration, $12.000.

ON THE PICTURESQUE SUSQUEHANNA.

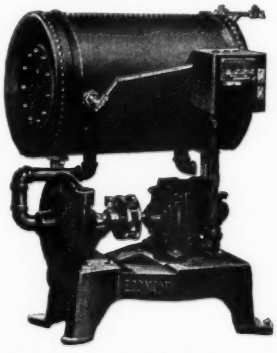
The accompanying photograph was taken of W. P. Stauder, manager of the Eastern branch of the Leader Iron Works at Owego, N. Y., and a party of friends at the close of one of the many delightful little river outings, of which Mr. Stauder as host has become quite famous. The start was made from Owego and the course laid up the picturesque Susquehanna for Hiawatha Island, where

Mr. Stauder as the Hero of the Occasion.

Mr. Stauder has a cottage. Here a luncheon that even a dyspeptic could enjoy was served the hungry "deck hands" on the sun veranda with the distant hills and autumn tinted foliage offering an Indian Summer panorama, the equal of which is said to be found in only a few favored spots.

THE "ECONOMY" AUTOMATIC CONDENSATION PUMP AND RECEIVER.

The accompanying illustration shows an "Economy" automatic condensation pump and receiver as manufactured by Thomas & Smith, Inc., 116 North Carpenter Street, Chicago. The return line is brought into the receiving tank at the point where the ell is shown, and as



The "Economy" Automatic Condensation Pump and Receiver.

the condensation flows by gravity into the tank, it raises a float which operates an automatic switch enclosed in the steel cabinet shown on the outside of the tank. This switch controls the operation of the motor and pump, starting them when the tank is filled to a predetermined level and stopping them when the condensation has been pumped out of the tank and into the boiler. Any air or vapor collecting in the system is vented through the check valves shown on the upper right hand end of the tank. The float is set so that at no time all of the condensation is pumped out of the tank, and as both the return line and the connection to the pump are taken out of the bottom of the tank, it is said to be impossible for the pump to lose its prime. The operation of the entire unit being automatic and the receiver being small, the condensation is returned to the boiler very rapidly and at high temperature. This pump, the manufacturers claim, is the result of much experimental work on their part, endeavoring to perfect an equipment that would completely overcome the difficulty of keeping the pump from becoming steam or air bound and losing its prime. Heating men who are interested in handling condensation on low pressure systems can obtain full information regarding this equipment upon request to Thomas & Smith.

GOVERNMENT CONTRACTS TO BE AWARDED.

Supervising Architect, Oscar Wenderoth, Treasury Department, Washington, D. C., will receive sealed proposals as follows:

Until 3 p. m., on December 6, 1912, for the construction complete (including plumbing, gas piping, heating apparatus, electric conduits and wiring, interior lighting fixtures, and approaches) of the United States post office and court house at McAlester, Oklahoma. The building is of three stories and basement, and has a ground area of approximately 7,500 square feet. Fireproof construction, except the roof, stone and brick facing and tin roof.

Until 3 p. m., on December 13, 1912, for the construction complete (including plumbing, gas piping, heating apparatus, electric conduits and wiring, interior lighting fixtures, and approaches), of the United States post office at Cullman, Alabama. The building is of two stories and basement and has a ground area of approximately 3,800 square feet, fireproof construction, stone and brick facing and tin roof.

Until 3 p. m., on December 17, 1912, for the construction complete (including plumbing, gas piping, heating apparatus, electric conduits and wiring, interior lighting fixtures, and approaches) of the United States post office at Fort Madison, Iowa. The building is one story and basement and has a ground area of approximately 4,500 square feet; fireproof construction; stone facing and tin roof.

Until 3 p. m., on December 23, 1912, for the construction complete (including plumbing, gas piping, heating apparatus, electric conduits and wiring, interior lighting fixtures and approaches) of the United States post office at Crowley, La. The building is to be of one story and mezzanine and has a ground area of approximately 5,100 square feet; non-fireproof construction; stone and stucco facing and tile and copper roof.

Until 3 p. m., on January 2, 1913, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring, interior lighting fixtures, and approaches) of the United States post office at Morgantown, W. Va. The building is to be two stories and basement, and has a ground area of approximately 5,300 square feet; fireproof construction throughout; stone facing and tin roof.

All proposals should be in accordance with drawings and specifications, copies of which may be obtained from custodian of the above sites, or from the Supervising Architect at Washington, D. C.

Among the Plumbing and Heating Contractors

NEWS FROM NEW ENGLAND.

Massachusetts.

Pittsfield.—Noble, Milne & Co. have been awarded the contract for plumbing and heating work on the residence of Miss Kate S. Buckingham, of Chicopee, at Bald Head Mountain, Lenox.

Worcester.—Bids for plumbing the Worcester tuberculosis hospital have been received by Superintendent of Public Buildings George C. Halcott. The lowest bid, and the one likely to get the contract, was submitted by the Field-Fielder Co., $9,150. Other bids were: Tucker & Rice, $11,020; M. D. Holmes & Sons Co., $10,979; William H. Toner & Co., $10,387; E. J. Nagle, $9,508; J. T. Cahill & Sons, $9,286.

Natick.—The contract for heating and ventilating the new high school building has been awarded to C. B. Sanborn, of Boston.

Pittsfield.—Contractor Larouche has awarded to D. F. Farrell & Co., the contract for the steam fitting and plumbing in the new block on Bradford Street.

Gardner.—John R. Carey is installing plumbing in the new home of William A. Gaston, president of the National Shawmut Bank, of Boston, at Barre. It is a $7,500 contract.

Falmouth.—Heating apparatus for the new schoolhouse is being installed by A. F. Lawrence.

Attleboro.—The Rev. A. J. Mooney, pastor of All Saints Church, has placed a contract for a new heating system in the church building with John Bullock. This is the first step in the complete reconstruction of the edifice.

Boston.—Public lectures on the subject of heating and ventilating have been arranged under the auspices of the Evening Trade School of the Massachusetts Charitable Mechanic Association. Joseph A. Nelson is the lecturer.

Connecticut.

Bridgeport.—Joseph Mullins & Co. has the contract for the plumbing and tinning on a store and tenement building to be erected on East Main Street by Mrs. E. J. Emmons. The building will be three stories high and will contain two stores and four apartments fitted with all modern conveniences. A store and tenement building is in process of construction at the corner of Greene and Hamilton Streets for Mary Santilla. J. J. Scanlon has the plumbing contract. Mr. Scanlon also has the contract for plumbing, and C. S. Eames & Co., for heating, in a new residence being constructed on Fairview Avenue for J. W. Coles. Mr. Scanlon is also doing plumbing and heating work in a two-family house on Harral Avenue for John Eckler. Louis Schine has the contract for plumbing in connection with extensive alterations being made to a building on Pembroke Street for Julius Schine.

Bridgeport.—Joseph Mullins & Co. have the contract for plumbing and heating in a new house for C. B. Ensign on Boston terrace. W. H. Clark has the plumbing contract for a garage on Norman Street for M. H. Batcheller. Work has been started on a garage on Calhoun Street for C. E. Weeks. The plumbing will be done by Schietinger & Ladwig.

Waterbury.—I. Levin is installing plumbing in I. N. Albert's new house on Beacon Street; in M. Korersky's new house on Rose Street and in W. A. Adams' house at Fairmount. The W. S. Carberry Co. is remodelling the plumbing in the Perkins' house on Perkins Street. Barlow Bros. Co. has several contracts in hand, the most notable being for plumbing in a new two-family house on Robbins Street for Thomas A. Delowry; plumbing, roofing and metal work for a factory being erected on Watertown Road for the Pilling Brass Co.; and for heating and roofing a factory building on State Street for A. C. Campbell. M. J. Daly & Sons, Inc., will do the heating in the Pilling Brass factory and the plumbing in the Campbell factory above referred to. John Marz & Co. are finishing Hugh A. Campbell's residence on the Columbia Boulevard. W. H. Love is to do the plumbing and Arthur Johnson the heating. W. H. Lowe also has the contract for plumbing and heating a three family house on Hill Street for Frederick Walls.

Hartford.—Charles O. Whitmore, architect, has let contracts for the Charles W. Stearns' house on Prospect Hill. The L. D. Mills Co., of Middletown, will do the plumbing work.

Hartford.—A new ordinance relating to the licensing of plumbers has been passed by the city government. The new law contains only a few technical changes and is similar to the old law in every respect.

Rhode Island.

Providence.—All bids received for the construction and equipping of the proposed new public comfort station in this city have been rejected and new bids asked for. This was done because of a mistake made by one of the bidders for the general construction work whose proposal was made to read $1,418 when it should have been $14,018.

NEWS FROM PITTSBURGH AND VICINITY.

The week preceding election did not develop much new business but this was expected. There was the usual number of repair jobs on the books, this being due to the approach of cold weather. Pittsburgh architects are pleased with the outlook for new building for the new year, as the architects report many inquiries concerning plans, and the statements of these people that they intend to build as soon as the early spring arrives.

Just outside of the immediate Pittsburgh district there is a fair volume of work on hand, such as school construction, lodge buildings, churches, dwellings and store rooms. There is a lot of this work under way, and more is on the boards of the architects.

The announcement this week by the officials of the new $3,000,000 Pittsburgh-New Orleans Navigation Co., of this city, that it would be in the market to build three 300-foot steel hull passenger boats for the Pittsburgh-New Orleans trade within two months, created no end of interest among Pittsburgh plumbers. These boats, say the officials, will be the most modern now plying inland waterways. They will have several hundred state rooms, each of which will be heated by steam. Bath rooms will be attached, and running water included. Stationary washstands will be provided in each suite. It is also said that the plumbing and steamfitting in these boats will cost upwards of $7,500 per boat. While the boats will be built outside of the Pittsburgh district, they will be brought here for final equipment.

Plumbing and heating contractors, affiliated with the Manufacturers and Contractors Club of this city, held an interesting meeting last week to consider what action should be taken in regard to the present mechanics lien laws at the coming session of the Pennsylvania State Legislature which convenes next January. Inasmuch as Section 13 of the 1901 act has been declared by the Pennsylvania Supreme court as unconstitutional and special class legislation under the change of the Constitution of 1874, it leaves the building interests without a lien law. Because of this decision, it is the opinion of some that the lien law of 1836 again goes into effect, which for many years offered less trouble and expense than did the 1901 act. Even if this were not the case, many of those interested in building construction feel that they would be better off without a lien law as it would compel contractors to use more care and subject owners of prospective buildings to a more rigid search as to the financial ability to meet obligations. The club will appoint a committee to assist in the work of obtaining the passage of a lien law that will prove satisfactory to all in the building trades.

The Duquesne Construction Co., of the Bessemer Building, Pittsburgh, which has the contract for the erection of the new St. Jerome Catholic church at Charleroi, Pa., has awarded the electric wiring to the Monessen Heating & Plumbing Co., of Monessen, Pa.

The heating and plumbing contract in the new $4,500 residence of Dr. William A. Copeland, of Vandegrift, Pa., has been awarded to the H. J. Kuhns Plumbing Co., of Vandegrift.

Plumbing and heating contracts have been awarded to Regan & Hornwell, of Monongahela City, Pa., by the Board of Education of Cokeburg, Pa., for a new school that is being erected at Cokeburg. The building costs $10,000.

The Columbus Heating & Ventilating Co. has been given the heating work in the $4,200 school being built at Port Vue, Pa., by the Board of Education of that place.

The O'Hara Estate is erecting a $40,000 garage, and the Baker-Smith & Company have been awarded the heating contracts.

E. J. Coleman, Wilkinsburg, Pa., has been given the plumbing contract for four residences being erected for A. J. Kinder, of Pittsburgh.

Moss & Blakeley Co., Pittsburgh, will do the plumbing in the $6,500 residence being built in Carrick, by Edward Bielau, of this city.

H. L. Rud, of McKeesport, secured the plumbing in the new $4,200 school being built at Port Vue, Pa.

NEWS FROM OHIO.

Columbus.—The time for receiving bids on the proposed addition to Mercy Hospital, of this city, has been extended to November 29th, when bids for the plumbing and heating systems will be opened.

Columbus.—Architect F. L. Packard, of Columbus, has awarded the contract for the extension of the heating system of Ohio University at Athens, Ohio, to DeMollet & Cornwell, of Athens. It is expected the work will be started at once and rushed to completion.

Lima.—State Plumbing Inspector, W. C. Groeninger, of Columbus, was this week a business visitor in Lima, looking after recently completed plumbing work in this city.

Columbus.—The Roberts Plumbing Co., 927 Mt. Vernon Avenue, has installed several motor trucks for handling plumbing supplies to various jobs throughout the city.

NEWS FROM CLEVELAND, OHIO.

A. K. Glendenning, 18603 Detroit Avenue, has the plumbing contract in the residence of Victor Reese, Manor Park. Also in the residences of Dixon & Chubb, on Mathews Avenue and Alameda Avenue, Lakewood, O.

Thomas Hindson, 932 E. 152nd Street, has the plumbing in a block, consisting of two stores and two suites. Also the plumbing in a four-suite apartment.

Skinner & Richards, 766 E. 152nd Street, have the contract for plumbing and heating in the residence of J. W. McClure, on the Shore Line.

The H. A. Patterson Co., 10318 St. Clair Avenue, have secured the plumbing contract for John Blakesly, Jr., amounting to $500. Also for L. A. Pyle, for $400.

J. J. Comerford, 8117 Wade Park Avenue, has been awarded the plumbing in the Cleveland Frog & Crossing Co., amounting to $800. Also in the residence of Robert Wright, amount $1,000.

J. L. Croft Co., 1308 Addison Road, will install the plumbing in the residence of F. W. Judd, Euclid Heights, for $2,400. Also the heating and plumbing in the residence of E. R. Alexander on 105th St., amounting to $2,100.

The Brainard Plumbing & Heating Co., 2062 E. 22nd Street, has the contract for the plumbing in the new factory for Bardons & Oliver, for $12,000.

The Chappell-Warren Co., E. 6th Street, has secured the heating contact for the new hotel on Superior Avenue, near E. 9th Street.

Papworth & Son, 6024 Euclid Avenue will install the plumbing in the garage of M. B. Vilas, on Euclid Heights. The heating is being done by the Mouat-Squires Co., 1246 W. 4th Street.

The Windmere Plumbing Co., 13550 Euclid Avenue, East Cleveland, has secured the plumbing contract, amounting to $5,000 for A. Mather, on E. 108th Street. Also the plumbing and heating for C. W. Benton, Euclid Heights, for $1,200 and for N. A. Mair for $900.

H. B. McGrath, 13423 Euclid Avenue, East Cleveland, has been awarded the heating contract in a new residence for Judge Dellenbaugh, on East 107th Street.

Warden & Leese, 1905 Prospect Avenue, have the plumbing contract for the factory building of S. Korach & Co., 1219 W. 9th Street, amounting to $5,000.

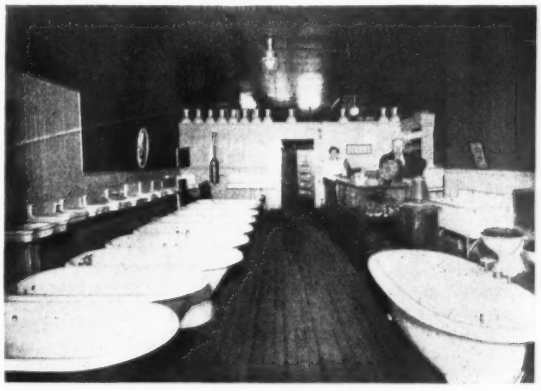
E. E. Hill, 8346 Broadway, will install the plumbing in the residence of H. A. Pratt, Cleveland Heights, amounting to $500. Also for Mr. Perks, Canton Avenue, for $300.

Fred Harmes, 7916 Harvard Avenue, has secured the plumbing contract in the factory of the Mechanical Rubber Co., consisting of 150 wash-stands and 50 water closets. Also three-story block and two stores on Fleet Avenue, amounting to $800, and a residence for H. L. Williams on Clifton Boulevard, amounting to $1,000.

C. M. Smith, formerly with the Standard Manufacturing Co. as city salesman, is now with the Kennedy Co. in the same capacity.

A MODERN PLUMBING ESTABLISHMENT.

An interesting example of what can be done in the way of making goods sell themselves by properly displaying them, is demonstrated by A. W. Biever, a well known master plumber of Aurora, Ill. The accompanying illustration gives some idea of the arrangement of his store, though the picture does not give justice to the



A. W. Biever's Up-to-Date Showroom.

subject, because much of the front of the store is not shown. Mr. Biever attributes much of his success to the fact that he keeps on display almost every article he sells, arranged in an artistic manner.

NEWS FROM CINCINNATI, OHIO.

The contemplated changes in the conduct of the water works department will not only be interesting to the water consumers of Cincinnati, but will be the means of much added business to the plumbing fraternity. Heretofore, consumers having meters were required to pay a minimum meter rate of two cents a day for every eight rooms or less. This rule worked an unjust hardship on many water consumers as the meters they had previously installed at a big expense, and for the purpose of paying only for the water actually consumed, as registered, proved to be a useless expense, as in many instances the minimum rate charges were double the meter charges. There were many complaints made to the water works department regarding this and yet the city demanded the installation of meters in properties not having them, but the property owners refused to install them, seeing no advantage in changing from survey to meter. With the new ruling all properties must have meters installed, and the meter rate only will be charged, which is the correct and proper method, to pay for what you get and no more or less. Already the trade is being solicited for meter orders and as the meter rate charges may be reduced from 7½ cents to 7 cents per hundred cubic feet, the consumer will gladly make the change.

Wanner Bros. have moved their place of business from 1230 to 1218 Vine Street. They have been in the "Over the Rhine" theater district since starting in business some eighteen years ago when Charles and Mathew Wanner

took over the business of Charles and Edward Pfau, of the Pfau Manufacturing Co., and moved it to 1325 Vine Street. After a number of years they moved next door to 1327, when in the year of 1905 Mathew Wanner died, leaving his brother sole owner of the business, which he has, with the assistance of his wife, conducted very successfully.

Mrs. George Harrington succeeds her late husband as representative of the Humphrey Heater Co., and the Sloan Valve Co. and will retain the office and show room at 139 West Seventh Avenue. She reports good business and expects an improvement right along.

NEWS FROM ST. LOUIS, MO.

The cold weather seems to have little effect on St. Louis building, as evidenced by the many new contracts being let for large residences, office, warehouse, factory, and mercantile buildings in all portions of the city. The large lettings and their successful bidders for plumbing and heating work are as follows:

Ed. J. Hughes, of 3822 Olive Street is doing the plumbing in the Grand Central theater and office building, being erected on the Northeast corner of Grand & Lucas Avenues. The heating on this building has been let to the Hanley-Casey Co., of 1615 Olive Street.

The Schaefer Plumbing Co., of 4852 Page Blvd., is installing the plumbing in the Empress theater and office building at Olive Street, just west of Grand Avenue. The imposing architecture of the Empress theater will make it one of the finest motion picture houses in St. Louis.

The Jos. F. Tumalty Plumbing Co., of 110 S. 9th Street, is doing the plumbing in the Columbia Square public comfort station, in the Ghetto district, at Tenth and Carr Streets.

Jerre Sheehan Plumbing Co., of 1012 Locust Street, has plumbing contracts for a new seven-story mercantile building being erected at 16th and Lucas Avenue; the six-story factory building being erected for the Crunden-Martin Woodenware Co. at Gratiot and 2nd Streets; also the five-story store and office building, on the Southeast corner of Grand and Park Avenues. The Kauffman Heating Co. of 21st and Olive Streets received the heating contract on the Grand and Park Avenue office building.

Urbauer-Atwood Heating Co., of 12th and Walnut Streets, is installing the heating system in the six-story office building at Olive and Vandeventer Avenues.

Abel & Gerhard, of 905 N. 6th Street, are installing the plumbing in the 45 room building being erected by the Methodist Orphans Home in Clayton.

N. J. Seibel, Jr., of 6119 Easton Avenue, is doing the plumbing and heating in the new annex of the St. Louis County Court House at Clayton.

The Humphrey and Pittsburgh hot water heater agencies report active business with their various hot-water heaters.

NEWS FROM LOUISVILLE, KY.

The observations of master plumbers in Louisville and throughout the state of Kentucky, place the amount of current business anywhere from 25 to 50 per cent more than at this time last year. Certain members of the trade upon whom fortune has smiled exceedingly recorded even 50 per cent more business during October than in September. It is a certainty that, at the opening of November, the entire craft is in better shape than it has been at this time of the year for many a day. Most of the plumbers and steam-fitters declare that they can get all the business they can handle without exerting themselves unduly. This enviable condition is traceable to the booming building year. It is noticeable, furthermore, that the boom of this year and last has extended not only along the lines of new work, but has included a lot of remodeling jobs which, because they invariably demand new plumbing, are just as much in demand as any other with the plumbers. There is no reason for the trade to believe that the least decrease in either new work or remodeling will become apparent as the season progresses, because of favorable weather conditions which promise to continue.

The one weakness of the local fraternity is said to lie in its inability to secure experienced journeymen plumbers and steam-fitters. The labor shortage naturally acts as a drag upon the situation and the services of thoroughly reliable men are at a premium. The bigger shops assert that they are compelled to send their best men out of town to handle up-state jobs, making the local situation more strained than ever. The shops which specialize in local trade alone find that there are not enough good men to go 'round. Consequently, most of the plumbers have decided to make a specialty of "raising" youngsters in the business, and the result is that this remedy has put many a shop in possession of the services of half a dozen alert young fellows, all of whom are bent upon becoming employing plumbers in time.

A meeting of the Louisville Master Plumbers' Association was held last Monday evening. The organization is now in healthier shape than it has ever been before during its entire career, and comprises in its membership more than 90 per cent of the entire employing and buying trade in the Gateway City. G. W. Schardein, president of the association, is enthusiastic over the work it is doing to better the conditions surrounding each of its members. The meeting was largely attended. It was for the purpose of conferring with representatives of the jobbing trade, as it is the intention of the master plumbers to create as much good feeling as possible in the allied trades. The association feels much encouraged by reason of the meeting, representatives of every jobbing and supply house in the city, including the Ahrens & Ott Manufacturing Co., the Laib Co., P. A. Vogel & Sons, the Falls City Plumbing Supply Co. and Louis P. Hyman & Co., being present. Harmony was the key-note of the gathering.

P. A. Vogel & Sons, well known Main Street jobbers, have purchased a handsome electric truck from the Kentucky Wagon Manufacturing Co. The "Urban" truck, as the Kentucky company's product is known, is of several tons capacity, and has just been put in commission by the Vogel firm, performing its duties very satisfactorily.

The Laib Company, one of the leading supply houses of the local trade, utilizes two heavy trucks, both of which were made by the Transit Motor Car Co. One of these trucks is among the largest in Louisville. The smaller one is equipped with a two-wheeled trailer for use in transporting extra-long lengths of pipe conveniently. The Laib Company considers its motor-driven delivery equipment indispensable.

F. S. Stover, a well known plumber in Fulton, Ky., in the extreme southwestern portion of the state, has installed a number of modern bath outfits during the past month. Business is better than it has been for a long time in Fulton, according to Mr. Stover.

The contract for the plumbing and steam-fitting in the new city hospital in Louisville, an institution which is now being erected at a cost of nearly $1,000,000, has been awarded to Fitzpatrick & Hoepfner, of Columbus, O. The A. Bentley & Sons Co., of Toledo, secured the general contract for the hospital buildings, eleven in number, the construction of which has almost been completed. The plumbing and heating equipment in the hospital will provide one of the biggest jobs in the history of building in Louisville.

The contract for the plumbing in the new residence of Charles Nelson, in Cherokee Park, has been closed by M. J. Duffy & Sons, of this city. Other park residences being handled by the Duffy firm are owned by D. X. Murphy and Samuel C. Henning. The same firm has contracted to furnish plumbing fixtures for the 100-room addition to the Preston Hotel at Third and Main Streets, and has the contract for the plumbing on the new $300,000 Y. M. C. A. home.

A number of fine contracts have been closed recently by F. S. Schardein & Son, a prominent local firm. They are working on a $10,000 contract for the plumbing and heating equipment in the addition to the Masonic widows' and orphans' home in this city. At Greenville, Ky., they are handling a $1,400 job of plumbing and hot water heating in the jail and jailer's residence, and a $900 heating outfit for the residence of Felix E. Martin. Louisville contracts included in the Schardein list are those for $800 worth of hot-water heating equipment in the resi-

dence of C. W. Taylor, plumbing costing $300 in the residence of J. A. Gregg, 2610 Bismarck Avenue; plumbing valued at $400 in St. Peter's Church, 1235 West Jefferson Street and plumbing costing $500 in the store-room owned by George Decken at 220 East Market Street. General business in the allied trades has never been better than it is at present in Kentucky, according to F. S. Schardein.

John B. Stickler & Son, Sixth and Walnut Streets, have closed a $150 bath-room contract for the residence of Peter Brown, 2345 West Walnut Street.

Two high-class jobs, including well-equipped baths and toilets for a cafe and a restaurant, have been handled during the week by David Welsh, at Seventh and Walnut Streets. One set of equipment was installed by Mr. Welsh in Isert's cafe, Fifth and Breckinridge Streets, while the other went to Gentile's restaurant, Tenth Street and Broadway.

Bywater Brothers, at Sixth and Walnut Streets, have remodeled their shop, putting it on a par with the most modern in the Louisville plumbing trade.

A contract for baths and toilets in a store-room at Eighth and Market Streets has been closed by J. J. Bosemer, of this city.

The practicability of the motor truck is being demonstrated in the welcome which has been accorded the modern means of transportation in the local wholesale plumbing trade. The testimony of truck-users in the craft hereabouts is that the motor-driven vehicle saves money in several ways, resulting in more business for the owner because of its advertising value in traveling about the streets, giving better and quicker service to customers and, last but not least, resulting in economical upkeep of deliveries. The territory which the jobbing trade in this city must cover today is 50 per cent greater than it was ten years ago, and is 100 per cent greater than it was twenty years ago, so great has been the expansion of Louisville.

NEWS FROM ST. PAUL, MINN.

A. F. Wilson, 563 Bellows Street, reports his summer work about finished and that he has several winter jobs on hand. Among some of the work he has just completed are plumbing and heating for Whitney & Wilson, in a $5,000 residence on Como Boulevard and in 1966 Ashland Avenue, 1211 Portland Avenue, 664 Edmund Street, 404 and 406 Central Avenue and a duplex flat building at Selby and Wilder Avenues; plumbing and heating for J. J. Donlon on Como Avenue and plumbing and heating in three houses for O. I. Braack at Bidwell Avenue and George Street.

Otto Gerber, 555 University Avenue, was awarded the plumbing contract in a duplex flat building for E. J. Ritt.

Wagner & Tschida, 603 North Dale Street, have just completed the plumbing in the Enkel Flats at Thomas and Grotto Streets, and in the Capital Heights Flats at Robert Street and Capital Heights.

Chas. A. Paer, architect in the Pittsburg Building, has plans and specifications out for figures on an eighteen flat building at Lincoln and Goodrich avenues, each flat will have a private bath and a set of laundry tubs for each three flats. A central steam heating plant will supply the heat and hot water for the entire eighteen flats.

Eastern owners of the Germania Life Building, at Fourth and Minnesota Streets, have a representative here taking figures through J. W. Stevens, architect, for remodeling the entire plumbing system in the building. Thirty new closets and sixteen porcelain urinals will be installed.

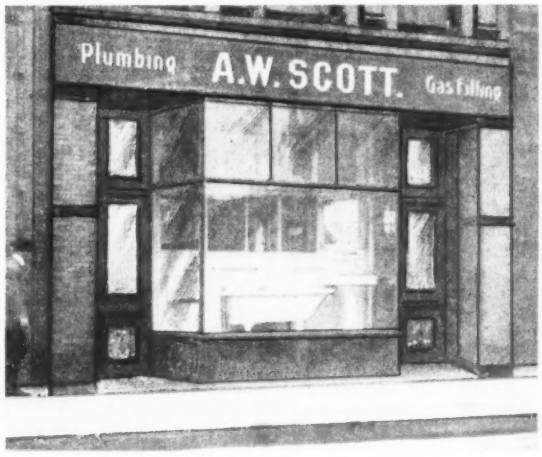
John H. Gludt, of Lake City, Minn., has secured the plumbing and heating contract for a residence for W. H. Stoddard, a banker in that city.

Thomas Clark, 416 Prior Avenue, was awarded the plumbing contract in Col. Derby's residence, by Clarence H. Johnston, architect.

The O'Neil Plumbing & Heating Co., 87 East Eighth Street, was the successful bidder on the plumbing, steam heating and sewer work in the Elsinger Hospital at Langford and Pascal Avenues. Sixteen lavatories, 11 closets, 1 drinking fountain, 4 baths, 4 slop sinks, 3 pantry sinks, 1 shower bath and 3 sets of laundry trays is the list of plumbing fixtures to be installed. Plans and specifications were drawn by Clarence H. Johnston, architect.

UP-TO-DATE MINNEAPOLIS SHOP.

At 217 Sixth Street South, Minneapolis, is the plumbing shop of A. W. Scott, the headquarters for an aggressive and growing business. Mr. Scott specializes on plumbing and gasfitting and has been installing some very fine residence jobs this past summer and fall. Their central location brings them much repair and jobbing work at good prices.



A. W. Scott's Attractive Show Window.

The photograph reproduced herewith shows an attractive window display. The foreman, Mr. Smith, uses an automobile in covering the various jobs, and it keeps him busy. An automobile truck is also used in hauling supplies and delivery work.

NEWS FROM THE PACIFIC COAST.

San Francisco.

At the present time there is much interest manifested in politics by local business men, yet it cannot be said that the building situation is affected one way or another by the outcome of the election. There is lots of work now under way and in spite of the lateness of the season, new work of importance is constantly being planned. Mechanics in the building trades are having plenty to do for the most part, and in some lines, as in the sheet metal trade for example, there is said to be a scarcity of expert workmen just now. The building boom in the southern part of the state has drawn some mechanics from the north, but taking the situation as a whole, there are perhaps as many men employed in the plumbing, heating and ventilating trades in San Francisco at the present time as during any other time of the year. This is a most encouraging condition, and by reason of the World's Fair activities, the condition will probably see a gradual improvement right up to the day when the Exposition is opened. Business in all lines is not uniformly good, however. The large retail merchants of the city are complaining of rather slack trade. The volume of business in all lines is undoubtedly much greater than a year ago, but as the number of concerns doing business has increased out of reasonable proportion, the extra trade has been cut up too much. One reason why the plumbing business here is in good shape is the fact that there has been but little increase in the number of firms in the past year. The contracting plumbers are not making great profits, but they are keeping pretty busy right along. Figuring is still close and there is the usual difficulty in getting certain supplies promptly.

Robert Dalziel, jr., has just been awarded the plumbing, heating and ventilating contracts for the Kahn building, a big department store in Oakland. These contracts will total about $50,000.

The contract for the vacuum cleaning, piping and machine for the ten-story Standard Oil building at Bush and San-

some streets, San Francisco, has been given to the United Electric Co. Amount, $1,380.

Dr. W. C. Hassler, chief sanitary inspector, by order of the Board of Health, this week swore to twenty complaints charging owners of wooden buildings with violating the local sanitary regulations. By reason of the activity of the Board of Health in enforcing the sanitary rules, there will be considerable need for extra plumbing work in this city this winter.

R. W. Kinney, of the R. W. Kinney Co., wholesale plumbing supplies, in San Francisco and Oakland, has made arrangements for building a four-story brick and steel business block to cost $60,000, on Washington Street, Oakland. This building, however, is not designed for the plumbing supply business.

The contract for the sewers, drainage, plumbing and gas-fitting on the five-story and basement apartment block, owned by Theo. J. Roche, at Pine and Jones Streets, has been awarded to Wittman, Lyman & Co. Amount, $2,900. The steam heating and hot water storage contract on the same building was given to the General Engineering Co. Amount, $698.

William F. Wilson, one of the pioneer plumbing contractors of the city, and a man highly respected in the trade for his personal character as well as business integrity, died in this city on Oct. 28th, at the age of 73 years. Mr. Wilson founded the firm, the William F. Wilson Company, of 1175 Turk Street, and amassed a large fortune in business. He was the owner of valuable downtown real estate and had numerous other interests. Notwithstanding his advanced age, he continued to take an active part in business up to a short time before his death. The deceased is survived by a daughter and two sons, Fred and Albert, the sons being in charge of the plumbing establishment. The funeral was held on Oct. 30th.

Mr. Jones, representing the Lukenheimer Co., manufacturers of plumbing specialties at Cincinnati, Ohio, is in the city on business this week.

D. B. McClellan, vice president and treasurer of Spang, Chalfant & Co., Inc., pipe manufacturers, of Pittsburgh, and George Mathewson, of the same company, have just been calling on the local trade in the course of a general Coast trip.

The plumbing and heating contract on a building owned by C. H. and Flora Offerman at Sacramento Street and LeRoy Place, has been awarded to J. E. Johansen. Amount, $1,909.

The plumbing, gas fitting and sewering contract for the Jos. Magner building on the Embarcadero south of Howard Street, has been given to H. J. Perrazzi. Amount, $7,725.

The John G. Sutton Co. has been awarded the contract for the steam heating, hot water apparatus, pumps, etc., on the Fred Finch Orphanage on Peralta, near Hopkins Street. Amount, $1,940.

The contract for the plumbing on the Henry apartment building at Stockton, Cal., has been given to the Phal & Harry Co., of Stockton. Amount, $11,204.

Bids for sub-contracts on the State Armory at Sacramento have just been opened and Hateley & Hateley submitted the low figures on the plumbing and steam heating work as follows: Plumbing, $3,077; steam heating, $2,060.

BUSINESS CHANGES.

Butte, Mont.—The Krueger Plumbing and Heating Co. has changed hands, I. Krueger retiring, while Charles P. Nevin, and Wm. J. Magill, old residents of Butte, succeed him and will conduct the business in the future. Mr. Krueger started in the plumbing business in Butte in 1889, when it was a rough mining camp, and at that time not only did all his own work, but was also his own office boy, bookkeeper, delivery man, steam fitter, gas man and heating specialist. He built up a very profitable business, and while the figures of the sale were not given out, they are said to be well up in the five figures.

Eagle Grove, Ia.—Chas. Odgers and B. M. Patton, of Mason City, have opened a new plumbing establishment here. They are both practical plumbers of several years' experience.

Memphis, Tenn.—In changing the firm name of J. A. Bailey & Co., Inc., to Cronin, Baker & Tindall, the oldest firm name in the plumbing and lighting fixture business in the city passes out of existence. The business was established in 1880 and incorporated in 1901. J. A. Bailey being the head of the company from its formation until his death. W. W. Cronin and T. W. Baker have been identified with the company for the past sixteen years and W. W. Tindall for twelve years, and these gentlemen were also three of the original incorporators of the company. Mr. Baker has held the office of secretary and treasurer and general manager since the incorporation, and Mr. Cronin superintendent, vice-president and president, respectively, and Mr. Tindall, vice-president. Cronin, Baker & Tindall have purchased all the stock of the company, and are now sole owners of the business, except the stock sold by them to several of the old employes of the company, so that they might share in the profits of the business and be a part thereof. The business will be continued at the old stand, 70 South Second Street, corner Union Avenue.

Spencer, Tenn.—Owen Emory, formerly of Knoxville, has purchased a half interest in the G. L. Steele Plumbing Co., of this city. Some months ago Mr. Steele bought the business from E. S. Burgess.

CONTRACTS AWARDED.

Crystal Falls, Mich.—The plumbing contract for the new high school building in this city has been let to John Obermeyer, of Iron Mountain, Mich., for $5,732.68. The contract for the heating and vacuum cleaning system was let to the Peninsula Heating & Plumbing Co., of Laurium, Mich., their bid being $12,000 for the heating and $826 for the vacuum cleaning plant.

Kalamazoo, Mich.—The Wheeler, Blaney Co., of this city, secured the heating and plumbing contract for the new police station and city jail.

Oklahoma City, Okla.—The B. L. Hutchinson Plumbing Co., of this city, has been awarded the contract for installing the public comfort station in the basement of the city hall building.

Duluth, Minn.—A. C. Schirmer Co., of Hibbing, Minn., secured the heating and ventilating contract for the new Buhl high school. The American Heating Co., of this city, were awarded the plumbing contract.

Detroit, Mich.—Otto A. Wurm & Co., 50 Adams Avenue West, have been awarded the plumbing and heating contract for a brick addition and alterations for the Detroit Range Boiler Co.

Gettysburg, S. D.—Frank Koepp has the contract to install a steam heating plant in the opera house in this city.

Bridgeport, Conn.—The plumbing contract in a store and tenement building to be erected on East Main Street, has been awarded to Joseph Mullins & Co.

Waterbury, Conn.—The Barlow Bros. Co., 62 Grand Street, has the contract for plumbing the two-family house being erected by Thomas A. Delowry.

Oswego, N. Y.—Hennessey Bros., 87 E. First Street, have been given the contract for the plumbing and heating systems at the new terminal station for Syracuse, Lake Shore and Northern Railroad Co.

Gadsden, Ala.—The plumbing and heating firm of J. A. Cowan & Co., 428 Chestnut Street, this city, reports a very prosperous season with all the work on hand they can handle. In addition to their repair work, they have recently secured contracts for plumbing in five new residences and several other good contracts on which they expect to begin work shortly.

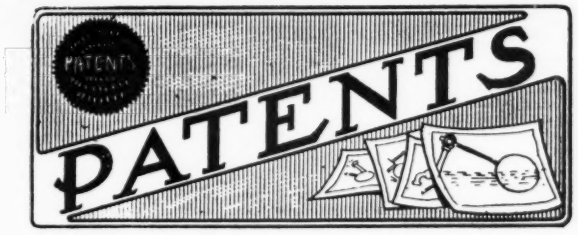
Indianapolis, Ind.—Hayes Bros., 437 Indiana Avenue, have been awarded the contract for the plumbing and heating in the Severn Hotel in this city.

Auburn, Neb.—C. A. Snider, of this city, has secured the plumbing and heating in Earl Fisher's new residence in Peru, Neb.

Athens, O.—Demolet & Cornwall, of this city, have secured the contract for the extension of the steam heating plant at the Ohio university in this city.

Kalamazoo, Mich.—The Wheeler-Blaney Co. has secured the contract for the plumbing and heating in the new central police station in this city.

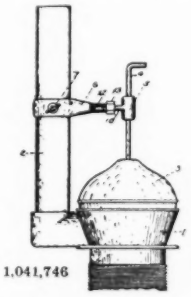
Bridgeport, Conn.—Louis Schine has secured the contract for the plumbing in Julius Schine's building on Pembroke Street.



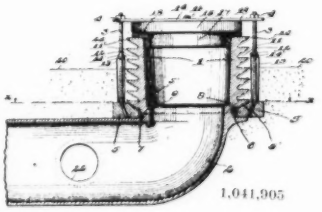
Plumbing Department.

1,041,746. Float-Valve for Tanks. Louis A. Cornelius, Grand Rapids, Mich. The combination of the valve seat, the valve, a stem therefor, a sleeve for such stem, means for supporting such sleeve in connection with the valve seat, a stem projecting from such sleeve, a hollow chamber in connection with the supporting means, slots in the walls of such hollow chamber and a nut having a taper thread,—whereby the stem may be adjusted in such hollow chamber and clamped in any desired adjustment.

1,041,905. Water-Closet Connection. George Francis Tong, Chicago, Ill. A water closet connection comprising a cylindrical member having a plurality of integrally formed annular flanges thereon and an annular groove therein, a horseshoe like yoke in said annular groove and adapted to turn therein; locking means in said groove to prevent withdrawal of the yoke, together with upstanding bolts rigidly secured to said yoke and adapted to hold a water closet on said connection, substantially as described.



1,041,746

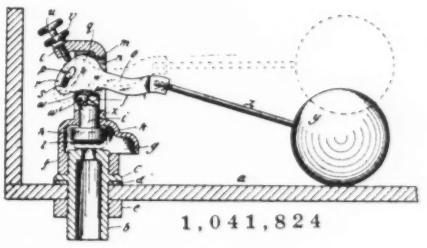


1,041,905

1,041,824. Ball-Valve for Flushing-Tanks. William Loser, Portland, Oreg. In a ball valve for flushing tanks, the combination of a valve housing having an outlet and an exterior extension constituting a bearing; a valve having a stem reciprocating in the roof of the valve housing and projecting there-through, said valve stem formed with a conical end; an arm and a hollow ball affixed to the end thereof, said arm provided with a cam head made with a slot; a fulcrum pin inserted through such slot of the cam head and affixed in said extension of the valve housing, said pin located to one side of the axis of the valve stem; the bottom face of said cam head made with a protuberance adapted to ride on said conical end of the valve stem; said protuberance being provided with an anti-friction device; and the parts being so arranged that when the extremity of the arm of the cam head is lifted above the normal the protuberance on the bottom face of the cam head will have climbed up the conical end of the valve stem and be positioned past the center thereof and lock the valve in its shut position.

1,042,087. Waste or Soil Pipe Connection for Water-Closets. John Clifford, Chicago, Ill., assignor to L. Wolff Manufacturing Company, Chicago, Ill., a corporation of Illinois. The combination with a water closet bowl having a floor engaging base provided with an annular recess, and a flat horizontal clamp face, of a lead soil pipe, a floor plate having a vertical cylindrical inner surface with beveled upper corner, said floor plate receiving the lead soil pipe and soldered thereto, and having on its upper face an annular groove with flat horizontal bottom, a thick, soft, flexible packing ring of compressible material fitting in said annular groove and engaging the closet base, and clamp bolts extending between said closet base and floor plate and compressing said packing-ring vertically between said horizontal clamp faces of said closet base and floor plate.

1,041,953. Expansion-Bolt. Dwight Wilson Bennett, Somerton, Pa., assignor of one-third to Benjamin Van Sant, Southampton, Pa. In an expansion bolt, the combination with a casing made in two members whose contiguous edges diverge toward their inner ends, a hook on one edge of each member projecting toward the other and having its inner face standing at right angles to the axis of the casing and its other face oblique thereto, and a second hook on the other edge of said member having its inner face oblique to match the oblique portion of the mating hook and its other face



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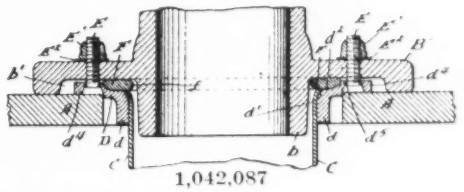
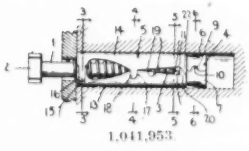


1,042,087

flat and flush with the end of the casing; of a nut having two diametrically opposite radial prongs at one end adapted to project through the space between the edges of said members and to stand normally in contact with the hook faces which stand at right angles to the axis of the casing.

1,042,061. Attachment for Dry and Water Closets. William B. Webb, Paducah, Ky. An attachment for use with dry or water closets comprising a tank disposed beneath the floor of such closet, a gate at one end thereof, a member adapted to move against said gate, a rod connected with said member, and an adjustable and detachable bearing surface, said member and bearing surface co-acting to close and lock said gate, said rod projected through said floor, means for opening said gate, and devices for retaining the same open.

1,042,365. Siphon-Valve for Flushing-Tanks. John J. Meyer, Yonkers, N. Y. In a siphon valve for flushing tanks and like fixtures, the combination of a siphon and a manually controlled starting device connected with the siphon for starting the same, the said starting device comprising a cylinder opening at its lower end into the flushing tank and



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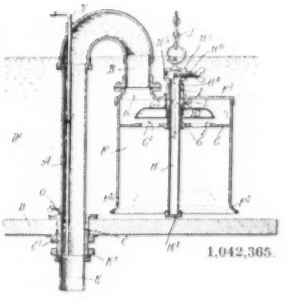
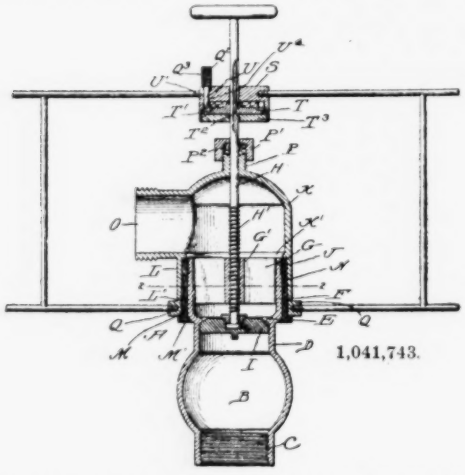


1,042,365

connected at its upper end with the said siphon, a plunger movable in the said cylinder for lifting the water therein and having an inlet opening, a valve controlling the said plunger inlet opening and moving with the plunger the said valve being provided with floating means for normally holding the valve afloat in an open position, the said valve being adapted to close the said plunger opening on the upward movement of the plunger, a stem provided at its lower end with a collar for engagement with the under side of the said plunger, and a manually controlled means for raising and lowering the said stem, the bottom on being raised carrying the plunger along and on being lowered allowing the plunger to descend independent of the stem.

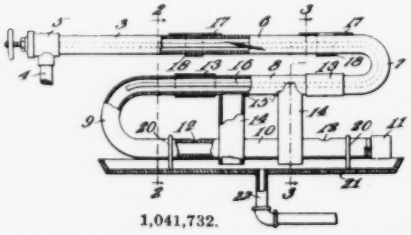
1,041,743. Reel-Operated Hydrant. William J. Clay, Cotton Valley, La. A reel operated hydrant comprising a vertically arranged pipe adapted to discharge at its upper end, said pipe comprising an enlarged portion having immediately above the same a straight cylindrical portion of less diameter than the said enlarged portion, said straight portion having an inwardly extending annular valve seat at its upper end, a valve arranged in said straight portion and adapted to engage said seat, said valve being adapted to move downwardly into said enlarged portion, a hose reel mounted upon said pipe, and means connecting said reel with said valve for the purpose of moving the valve, the straight portion having such a length that a comparatively large number of turns of the reel will be necessary to move the said valve from its seat into the said enlarged portion.



1,041,743.

Heating Department.

1,041,732. Oil-Burner. Benjamin R. Briles, Le Roy, Kans. A liquid fuel burner embodying a pipe bent to form a plurality of vertically arranged parallel horizontal portions, the lowermost portion forming a vapor chamber and having an upper vapor outlet therein, and the upper portions forming vapor generating chambers receiving the fuel, and a down draft tube extending from an intermediate portion of the pipe below the lowermost portion, the lowermost portion passing through the down draft tube with the vapor outlet disposed at one side of the down draft tube.



1,041,732.

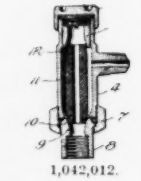
1,041,798

1,041,798. Mist-Producing Nozzle. Rudolph M. Hunter, Philadelphia, Pa., assignor to Warren Webster & Company, a corporation of New Jersey. In a spraying nozzle for producing mist, the combination of a head having a water supply aperture, a nozzle portion detachably secured upon the head and having a tapered chamber within the same, the large end of which chamber is next to the head and the small end terminating at its apex in a boundary formed like a knife edge with the incline on the inside as a continuation of the taper of the chamber, and a tapered guide piece fitting the tapered chamber nearly to its apex and providing a transverse spiral wall to form two spiral tapered passages, the small end of which wall is made of small thickness to permit the two spiral columns of water to unite into a solid body before passing through the final portion of the tapered chamber adjacent to the aperture.

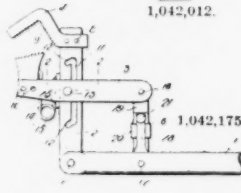
1,042,012. Air-Valve for Radiators. Fred W. Leuthesser, Chicago, Ill. In an air valve for radiators, the combination of a casing provided with an inlet for connecting it to the radiator, an expansible member loosely held within the casing, an upper abutment adjustable in and detachable from the casing, and having a seating face for the upper end of the expansible member, a freely detachable coupling nipple having an opening therein contracted intermediate its ends, the wall below said contraction being screwthreaded, the wall above said contraction being configured to provide a seating face for the lower end of the expansible member and furnish a lower abutment for the expansive member, said member being separated and loosely held in position between the seating faces of the upper and lower abutments, the lower open end of the valve casing being of a size to permit the expansible member to pass freely therethrough, a coupling nut for attaching the nipple to the casing, the upper and outer edge of the nipple bearing against the lower inner edge of the open lower end of the casing making a steam and air tight joint at this point, substantially as described.

1,042,175. Pipe-Wrench. Carl B. Visness, Mekinock, N. D. A wrench of the class set forth, comprising a handle, a stationary jaw, a main shank connecting said jaw with the handle and provided with a bayonet slot, embodying a plurality of fulcrum shoulders, a pivoted shank, a movable jaw thereon, a longitudinally extensible link connecting the pivoted shank with the handle, a fulcrum pin on the pivoted shank adjustable in the bay net slot, and a spring for retaining the fulcrum pin in engagement with any one of said shoulders.

1,042,073. Die-Stock. Charles T. Benson, Chicago, Ill., assignor to The Nye Tool and Machine Works, Chicago, Ill., a corporation of Illinois. Filed Nov. 9, 1911. In a die stock, a stocky body adapted to carry the dies, a leader bushing screwing upon said body and adapted to be fastened to the work, die controlling levers fulcrumed at one end upon said stock body, and a rotatable and laterally fixed cam ring having internal cams arranged lengthwise of the axis adapted to automatically control said levers.



1,042,012.



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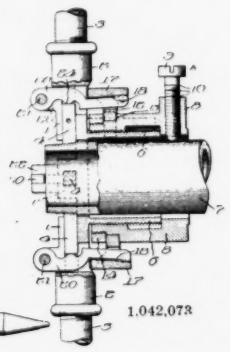

1,042,073

Chicago, Ill.—Public comfort stations are to be placed underneath the sidewalk on the Randolph Street side of the Public Library building. Public comfort stations are maintained in the city hall building for the use of persons having business in the building, but the ones to be created by the library board will be open for general use for men and women.

Houston, Tex.—Sealed bids will be received by city secretary, Dan C. Smith, Jr., until 12 o'clock noon, November 25, 1912, for plumbing, sewering, vacuum cleaning and steam heating of the Longfellow three-story 12-room fireproof school house located on Chartres Street, this city. Plans and specifications can be obtained at the office of Sanguinet, Staats & Barnes, architects.

Mr. Henkenius, manager for the San Francisco establishment of the N. O. Nelson Mfg. Co., of St. Louis, Mo., states that business is holding up remarkably well this fall, and that the six travelers employed by the company on the Coast are receiving splendid encouragement from the trade for this time of the year.

The interest of S. Russell Oates in the Central Plumbing Co., of South Pasadena, Cal., has been sold to Randolph Seay and George C. Coots.